

Purpose of Chapter 6

The information presented in this chapter highlights some of the more significant environmentally sensitive areas within the GRP region that could be impacted as a result of an oil spill. Consistent with the overall purpose of the GRP's, this information is only intended to provide a level of detail required during the initial phase of spill response. During an actual event, additional resource information will be available from the resource trustee agencies supporting the Environmental Unit in the Planning Section. Specific resource concerns for areas that already have designated protection strategies in Chapter 4 of the GRP may be found in the "Resources Protected" column in the matrix describing the individual strategies.

The information provided in Chapter 6 is intended for use in:

- Preparing an initial ICS 232 form (Resources-at-Risk summary) for Incident Command
- Identifying those sites where it may be necessary to implement Flight Restriction Zones in order to prevent disturbance/injury to sensitive wildlife species.
- Identifying sensitive shoreline habitats to assist SCAT teams in their initial assessments and to help personnel in the Environmental Unit in developing appropriate cleanup strategies.

Chapter 6 consists of two sets of maps and tables - one for wildlife and the other for fish, shellfish and selected sensitive marine habitats. These data are presented separately, both for ease of reading and because each of the two data sets has slightly different applications within the context of spill response.

The wildlife maps and tables present information on the location and seasonal sensitivity of key wildlife resources. Types of data included here are concentration areas for waterfowl, marine birds and shorebirds; seabird colonies; nesting areas for sensitive species such as eagles, herons and falcons; and marine mammal haulout sites. This information is intended for the rapid identification of areas where significant wildlife oiling impacts could be anticipated and to denote areas where flight restriction zones may be required to protect sensitive wildlife. Each site depicted on these maps is identified by a unique number in order to facilitate the process of communicating Flight Restriction Zone recommendations to the Operations Section in ICS. The tables accompanying the wildlife maps present information on the season(s) during which sites may be particularly sensitive to disturbance.

The fish/shellfish/marine habitat maps present general information on the location of baitfish spawning beaches, herring spawning areas, streams used by anadromous salmonids, hardshell clam concentrations, and kelp and eelgrass beds. This information will be most useful to personnel involved in assessing initial risks to fish and shellfish resources and to those conducting initial beach reconnaissance, pending availability of more detailed resource information and the formation of SCAT teams.

Because the operational uses of this information differ from those of the wildlife data, individual site identification numbers have not been assigned. Tables associated with these maps will identify the seasonal sensitivity of each resource. In addition, notes accompanying each table will provide information on the general distribution and seasonal sensitivity of those resources that are not mapped but may occur anywhere in the GRP region (ex. juvenile salmonids in shallow nearshore waters).

6. Sensitive Resource Description

6.1. Chapter Overview

Despite major alterations to the Columbia River over the past hundred years, it still provides habitat to hundreds of species of fish and wildlife. Fortunately, several National Wildlife Refuges exist along its course to protect pockets of natural habitat. A brief summary of fish and wildlife found in the lower Willamette and Columbia Rivers follows - more detailed information and maps on particular wildlife concentration areas can be found in Section 6.6

6.2. Fish

From the tiny sandroller to the mighty white sturgeon, the lower Columbia/Willamette River system hosts a remarkable array of fish species. Populations of some species have been devastated by hydroelectric dams, overfishing, and habitat alterations. In particular, a number of salmonid stocks have been listed or proposed for listing as threatened or endangered under the federal Endangered Species Act. However, other fish species are coming back and providing some of the best recreational fishing in the nation. Chinook salmon, steelhead, walleye, large-mouthed and small-mouthed bass, white sturgeon, American shad, and smelt are just a few of the popular recreational species. Some of these fish are also commercially harvested in gillnets.

6.3. Wildlife

Mammals

Many species of mammals abound along unaltered shorelines and on islands in the lower Columbia River and lower Willamette River. Harbor seals are quite common and increasing in numbers in the Columbia River estuary. California sea lions, which are also on the increase, can be found from the estuary to Bonneville Dam as they follow the fish runs.

The endangered Columbia white-tailed deer is now limited to the mainland and islands near Puget Island. Elk and black-tailed deer occur in many localities along the river. Other mammals likely to be seen include river otter, mink, beaver, muskrat, nutria, raccoon, and coyote. Numerous species of other small mammals abound in the appropriate habitats bordering the rivers.

Birds

Besides being known as a premier waterfowl hunting area, the lower Columbia River and portions of the Willamette River are quite famous as a birdwatching destination. Outstanding birding locations include Astoria, Ilwaco, Ridgefield National Wildlife Refuge, and Sauvie Island. During the winter, the lower Columbia River hosts hundreds of thousands of ducks, geese, and swans. Some of the species of waterfowl most likely to be seen include Tundra swan, five subspecies of Canada goose, green-winged teal, mallard, northern pintail, American widgeon, ring-necked duck, lesser scaup, common goldeneye, bufflehead, hooded merganser, and common merganser. Other waterbirds found in winter include loons, grebes, cormorants, and gulls. During spring and fall migration, these same birds are accompanied by numerous shorebirds and terns. One of the most impressive migrants, the sandhill crane, can be found at Ridgefield National Wildlife Refuge. Raptors are abundant also – the lower Columbia River is an excellent location to view bald eagles, northern harriers, red-tailed hawks, peregrine falcons, and merlins.

While most species head north for the breeding season, many birds nest along the Columbia River as well. Colony nesting species include Brandt's and double-crested cormorants, Caspian terns, western and ring-billed

gulls, and great blue herons. Other birds that breed here include bald eagles, osprey, the Great Basin subspecies of Canada goose, mallards, and many species of songbirds.

6.4. Flight Restriction Zones/ Sensitive Wildlife

Flight restriction zones have been designated in the GRP to minimize disturbance to certain wildlife species. An identified location could represent a heron colony or the individual nest of a sensitive species such as bald eagle. While some zones may be restricted year around, others will be in effect only during the months listed in the matrix.

The no-fly bubble is the area within a 1,500 foot radius and below 1,000 feet in altitude around the location.

All aircraft, including those from the government, contractors or media, are expected to avoid these zones when restrictions are in effect. In the event that one of these zones must be entered during a spill response in the lower Columbia River, clearance must be obtained from the Washington Department of Fish and Wildlife (WDF&W) and the United States Fish and Wildlife Service (USFWS).

During oil spills, pilots are also asked to avoid disturbing any large concentrations of birds and other wildlife. By keeping a safe distance or altitude, pilots can prevent the accidental hazing of unaffected wildlife into oiled areas and minimize the risk of aircraft/ bird collisions.

6.5. Hazing

Hazing or directed harassment, is a method used to drive or herd wildlife out of an area where they are at risk of becoming oiled. Hazing techniques include the use of visual and audio devices, personnel for herding, vessels and aircraft. In the right circumstances it can be an effective tool for protecting some wildlife species. In other cases it can be disastrous as unaffected wildlife can be driven into oiled areas, or forced to abandon nests or young.

Before hazing can begin for all species of wildlife in the Dalles Pool, clearance must be obtained from the Washington Department of Fisheries and Wildlife and the United States Fish and Wildlife Service. All hazing efforts during a spill will be directed by these agencies. The deliberate harassment of wildlife without first securing permission from these agencies is a violation of Federal and State laws.

The following information must be provided for a determination on whether hazing might be authorized in a given situation.

1. Description of the situation where hazing authorization is being sought
2. Location to be hazed
3. Species of wildlife to be hazed and number of animals
4. Methods and equipment used
5. Date and time of hazing
6. Name, phone number, radio frequency, pager number and the amount of hazing experience of the individual requesting permission

The responsible agencies will evaluate each request on a case by case basis. All hazing of marine mammals, threatened and endangered species, and all hazing by aircraft will be performed only under authority and general supervision of WDF&W, USFWS, NMFS or persons designated by these agencies. Representatives of these agencies can be contacted through the planning section of the Unified Command System during the spill event.

LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 141-151													PERIOD OF SENSITIVITY								
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-1	Eagle Creek					Yes		Yes													
WLC-2	Pierce Ranch National Wildlife Refuge			Yes				Yes													
WLC-3	Pierce Island					Yes		Yes													

LOWER COLUMBIA RIVER FISHERY RESOURCES																					
River Mile 141-151													PERIOD OF SENSITIVITY								
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
FLC-1	Bonneville Tributaries						D														
FLC-2	Hamilton Creek	U						D													
FLC-3	Hardy Creek							H													

* FLIGHT AND GROUND ENTRY RESTRICTIONS

Flights below 1000 feet require clearance

Sensitive season - Minimize seasonal disturbance

FISH STOCK STATUS

C - CRITICAL

D - DEPRESSED

H - HEALTHY

U - UNKNOWN

LOWER COLUMBIA RIVER - RIVER MILE 141-151

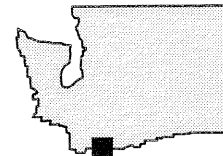
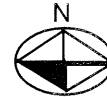
FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

● Sensitive Species Nesting

▨ Wildlife Concentration Area

⊠ Boat Launch ⚡ Town or City



STEVENSON

CASCADE LOCKS

BRIDGE OF THE GODS

BONNEVILLE DAM

FLC-2

GREENLEAF SLOUGH

HAMILTON CREEK

HAMILTON ISLAND

ROBINS IS.

BRADFORD IS.

WLC-1

EAGLE CREEK

FLC-1

OREGON

OREGON

← River Flow

FLC-3

WLC-2

IVES ISLAND

WLC-3

MOFFETT CREEK

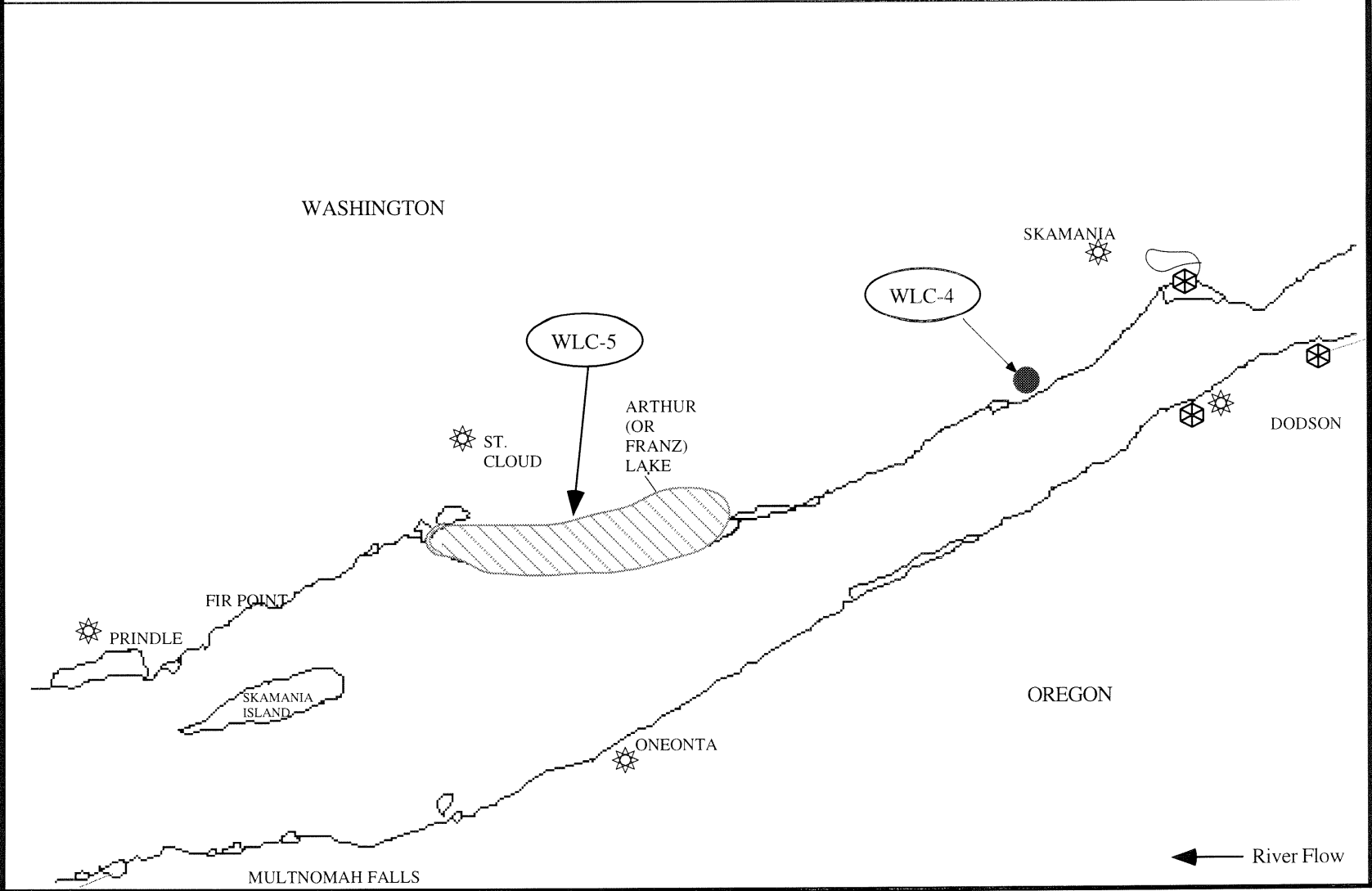
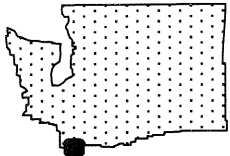
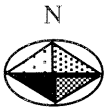
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 134-141																				
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-4	Skamania					Yes		Yes												
WLC-5	Franz Lake National Wildlife Refuge			Yes				Yes												
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div> <div></div> <div>Flights below 1000 feet require clearance</div> </div> <div> <div></div> <div>Sensitive season - Minimize overflight disturbance</div> </div> </div>																				

LOWER COLUMBIA RIVER - RIVER MILE 134-141

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES


- 1. Pilots refer to chapter 6.3 for Flight Restriction Zones
- 2. All ground entry within 100 yards of sensitive nesting species is restricted
- 3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations


 Boat Launch  Town or City  Sensitive Species Nesting  Wildlife Concentration Area



LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 128-134																				
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-6	Sand Island Slough			Yes				Yes												

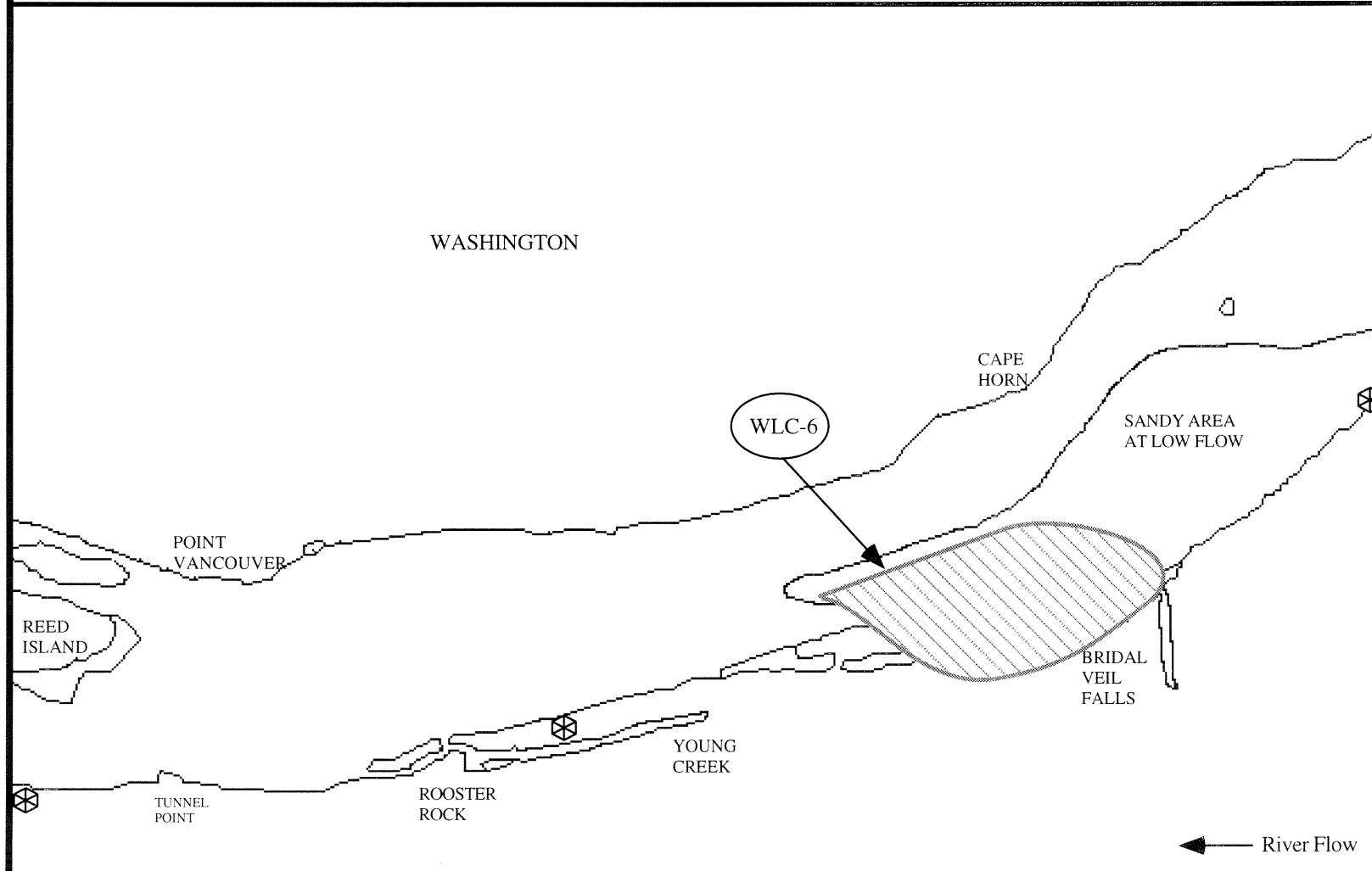
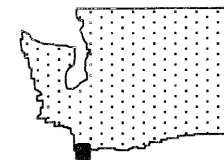
*** FLIGHT AND GROUND ENTRY RESTRICTIONS**



 Flights below 1000 feet require clearance

 Sensitive season - Minimize overflight disturbance

LOWER COLUMBIA RIVER - RIVER MILE 128-134 **FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES**

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



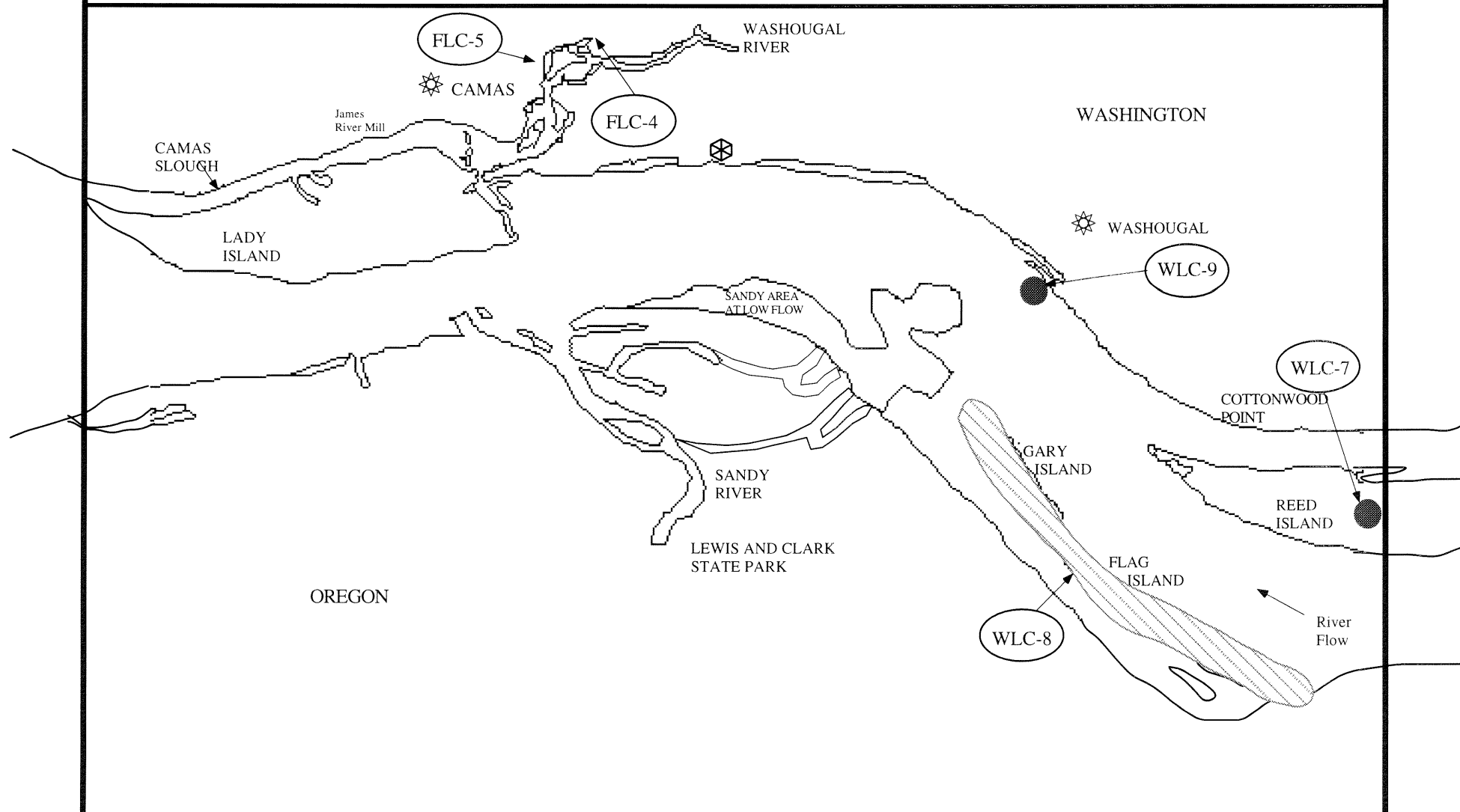
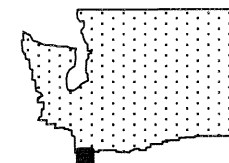
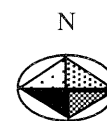
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 119-128																				
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-7	Reed Island					Yes		Yes												
WLC-8	Gary, Flag, & Chatlam Islands					Yes		Yes												
WLC-9	East of Camas					Yes		Yes												
LOWER COLUMBIA RIVER FISHERY RESOURCES																				
River Mile 119-128																				
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FLC-4	Washougal River	U	U			H	D													
FLC-5	West Fork Washougal River	U	U																	
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div>  Flights below 1000 feet require clearance  Sensitive season - Minimize seasonal disturbance </div> </div> <div> FISH STOCK STATUS C - CRITICAL D - DEPRESSED H - HEALTHY U - UNKNOWN </div>																				

LOWER COLUMBIA RIVER - RIVER MILE 119-128

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

 Boat Launch
  Town or City
  Sensitive Species Nesting
  Wildlife Concentration Area

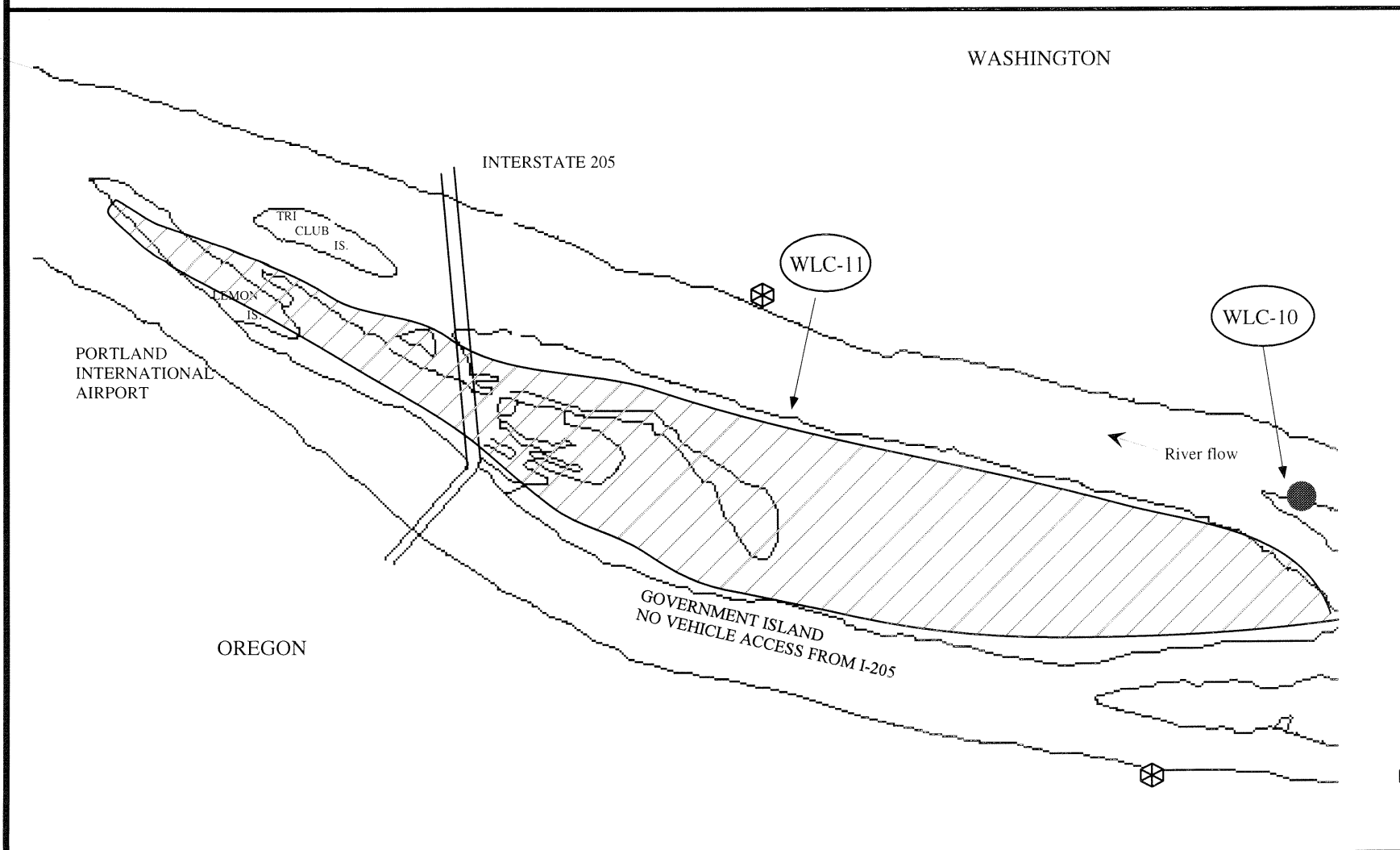
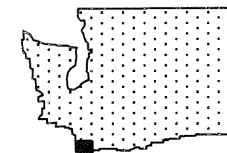
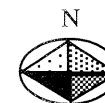


LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 110-119																				
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-10	Ackerman Island					Yes		Yes												
WLC-11	Government Island			Yes		Yes		Yes												
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Sensitive season - Minimize overflight disturbance</div>																				

LOWER COLUMBIA RIVER - RIVER MILE 110-119 **FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES**

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

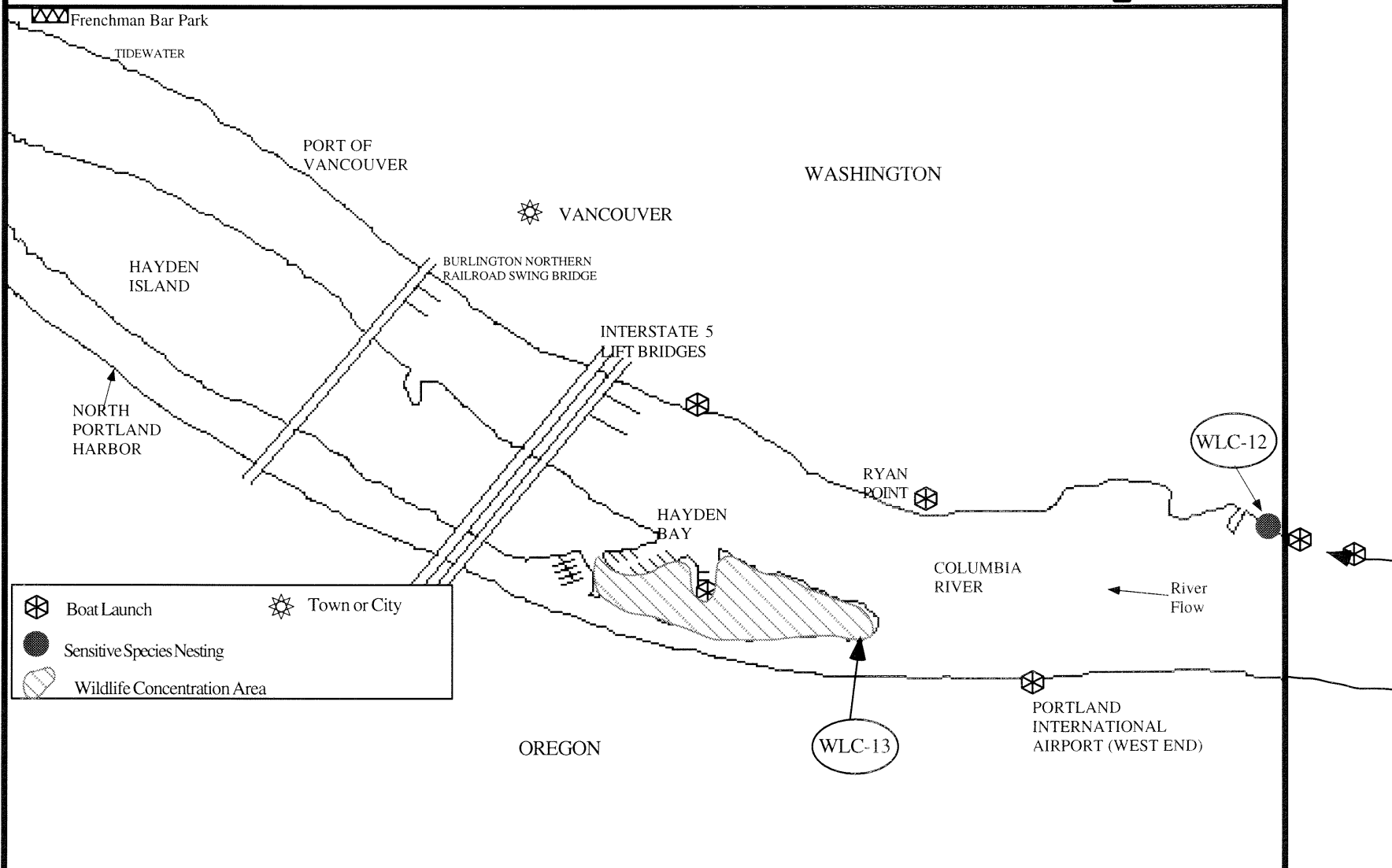
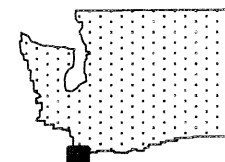
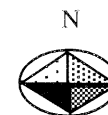
 Boat Launch
  Town or City
  Sensitive Species Nesting
  Wildlife Concentration Area



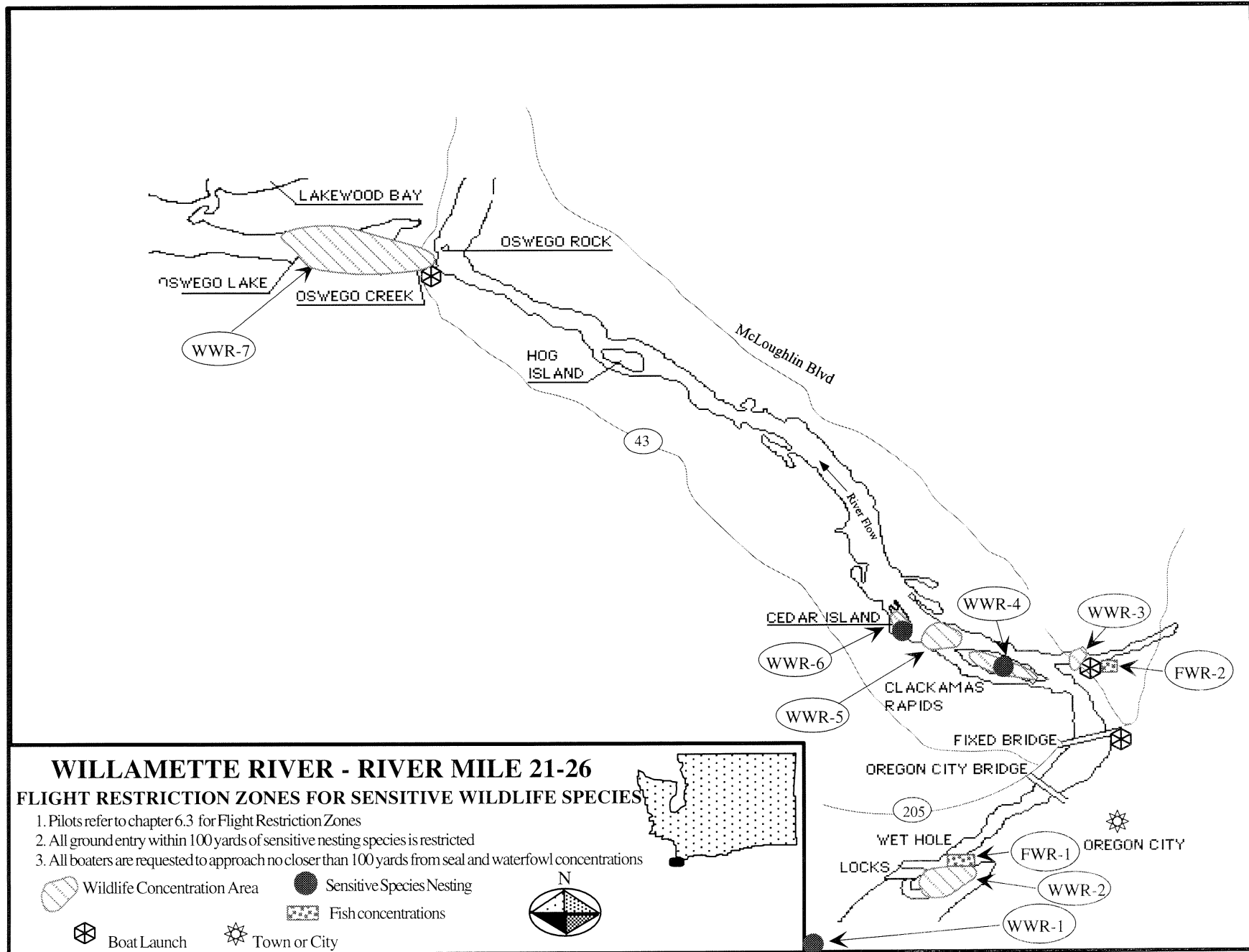
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 104-110																					
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-12	West of Lieser Point					Yes		Yes													
WLC-13	Tomahawk Island					Yes		Yes													
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Sensitive season - Minimize overflight disturbance</div>																					

LOWER COLUMBIA RIVER - RIVER MILE 104-110 **FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES**

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations





LOWER WILLAMETTE RIVER FISH & WILDLIFE RESOURCES																					
Willamette River Mile 21-26																					
Code	Location	Turtles	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WWR-1	Tualatin River					Yes															
WWR-2	Willamette Falls				Yes																
WWR-3	Clackamette Park			Yes																	
WWR-4	Clackamette Island					Yes		Yes													
WWR-5	Meldrum Slough					Yes															
WWR-6	Cedar Island	Yes																			
WWR-7	Lake Oswego	Yes		Yes																	
LOWER WILLAMETTE RIVER FISHERY RESOURCES																					
Willamette River Mile 21-26																					
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Sockeye Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
FWR-1	Willamette Falls Fish Ladder	Yes	Yes	Yes		Yes	Yes	Yes													
FWR-2	Clackamas River Cove/Lagoon	Yes		Yes																	
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Sensitive season - Minimize overflight disturbance</div></div>																					



LOWER WILLAMETTE RIVER FISH & WILDLIFE RESOURCES																				
Willamette River Mile 16-20																				
Code	Location	Turtles	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WWR-8	Kellogg Lake	Yes		Yes		Yes														
LOWER WILLAMETTE RIVER FISHERY RESOURCES																				
Willamette River Mile 16-20											PERIOD OF SENSITIVITY									
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Sockeye Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FWR-3	Kellogg Creek	Yes					Yes													
FWR-4	Johnson Creek	Yes				Yes														

*** FLIGHT AND GROUND ENTRY RESTRICTIONS**

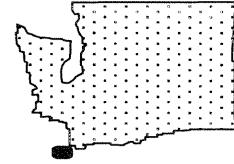
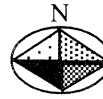
 Flights below 1000 feet require clearance






 Sensitive season - Minimize overflight disturbance

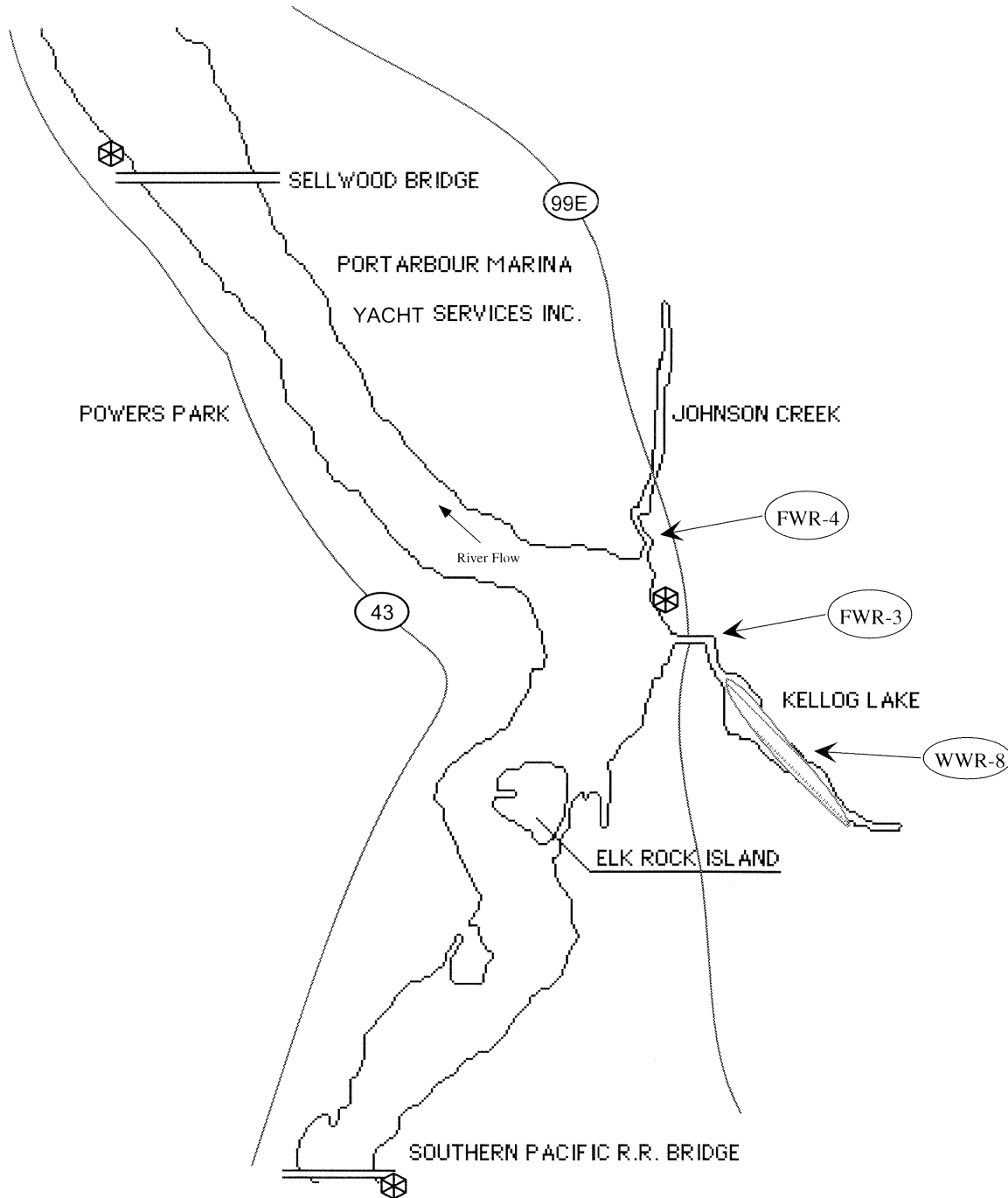
WILLAMETTE RIVER - RIVER MILE 16-20

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



 Boat Launch
  Town or City
  Wildlife Concentration Area
  Sensitive Species Nesting
  Fish concentrations

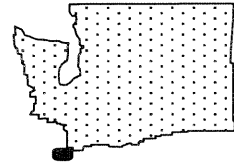
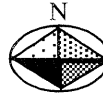







LOWER WILLAMETTE RIVER FISH & WILDLIFE RESOURCES																				
Willamette River Mile 11-16																				
Code	Location	Turtles	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WWR-9	Crystal Springs Lake (inland)	Yes		Yes																
WWR-10	Oaks Bottom			Yes																
WWR-11	East side of Ross Island/East bank Willamette					Yes		Yes												
WWR-12	West side of Ross Island					Yes		Yes												
WWR-13	West side of Ross Island					Yes		Yes												
WWR-14	Fremont Bridge					Yes		Yes												
LOWER WILLAMETTE RIVER FISHERY RESOURCES																				
Willamette River Mile 11-16												PERIOD OF SENSITIVITY								
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Sockeye Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FWR-5	OMSI/River Place			Yes																
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div> <div></div> <div>Flights below 1000 feet require clearance</div> </div> <div> <div></div> <div>Sensitive season - Minimize overflight disturbance</div> </div> </div>																				

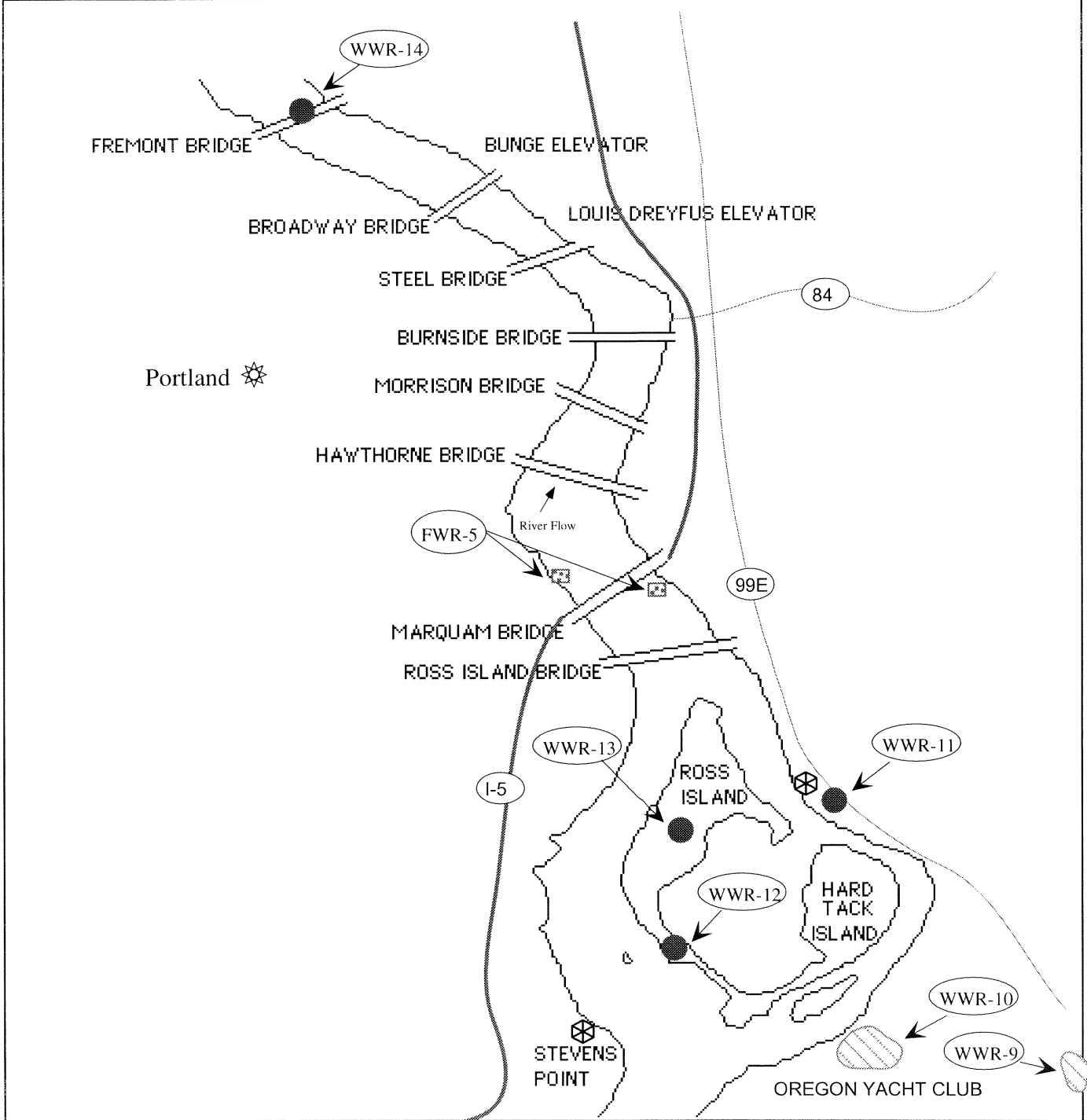
WILLAMETTE RIVER - RIVER MILE 11-16

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

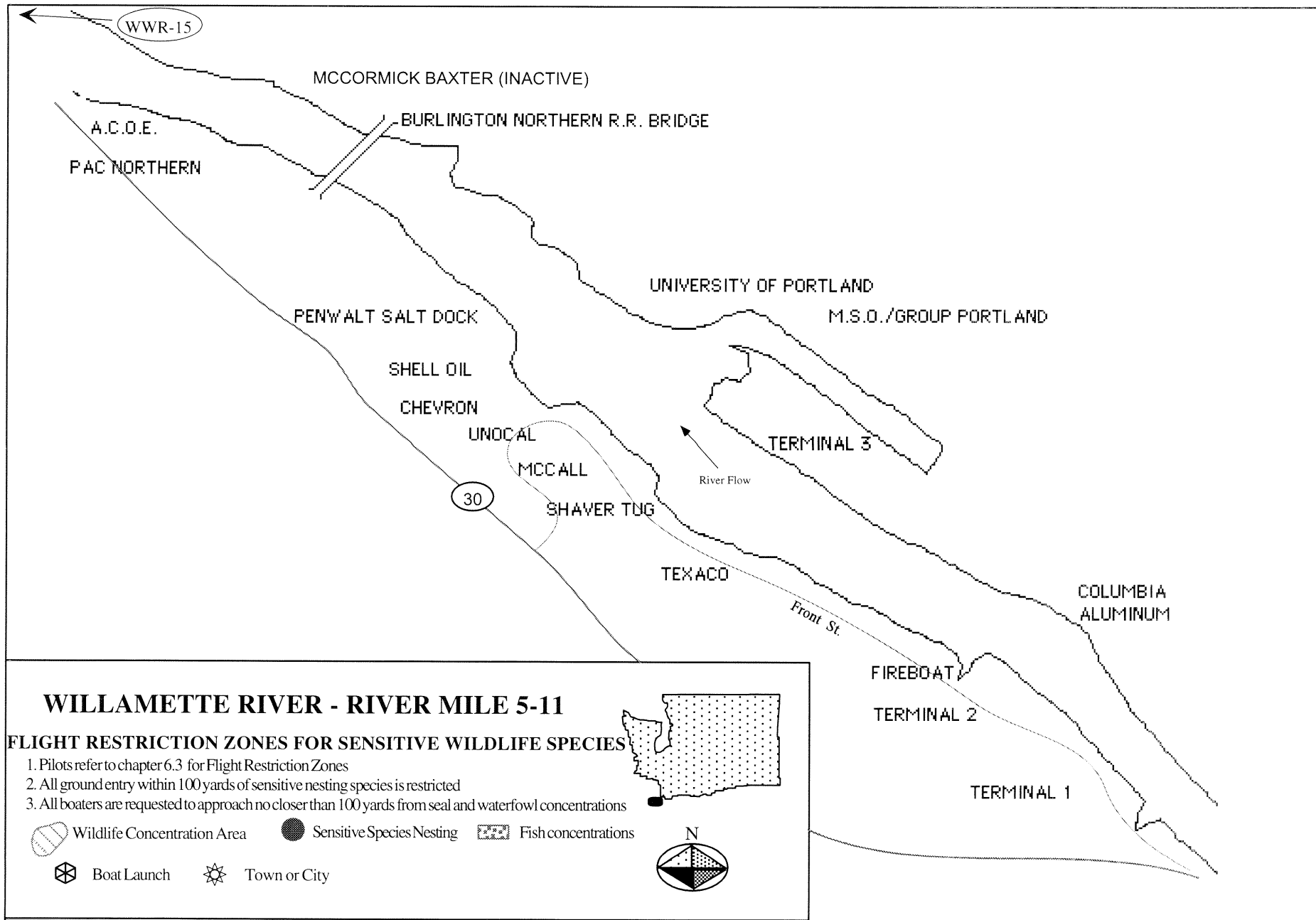
1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



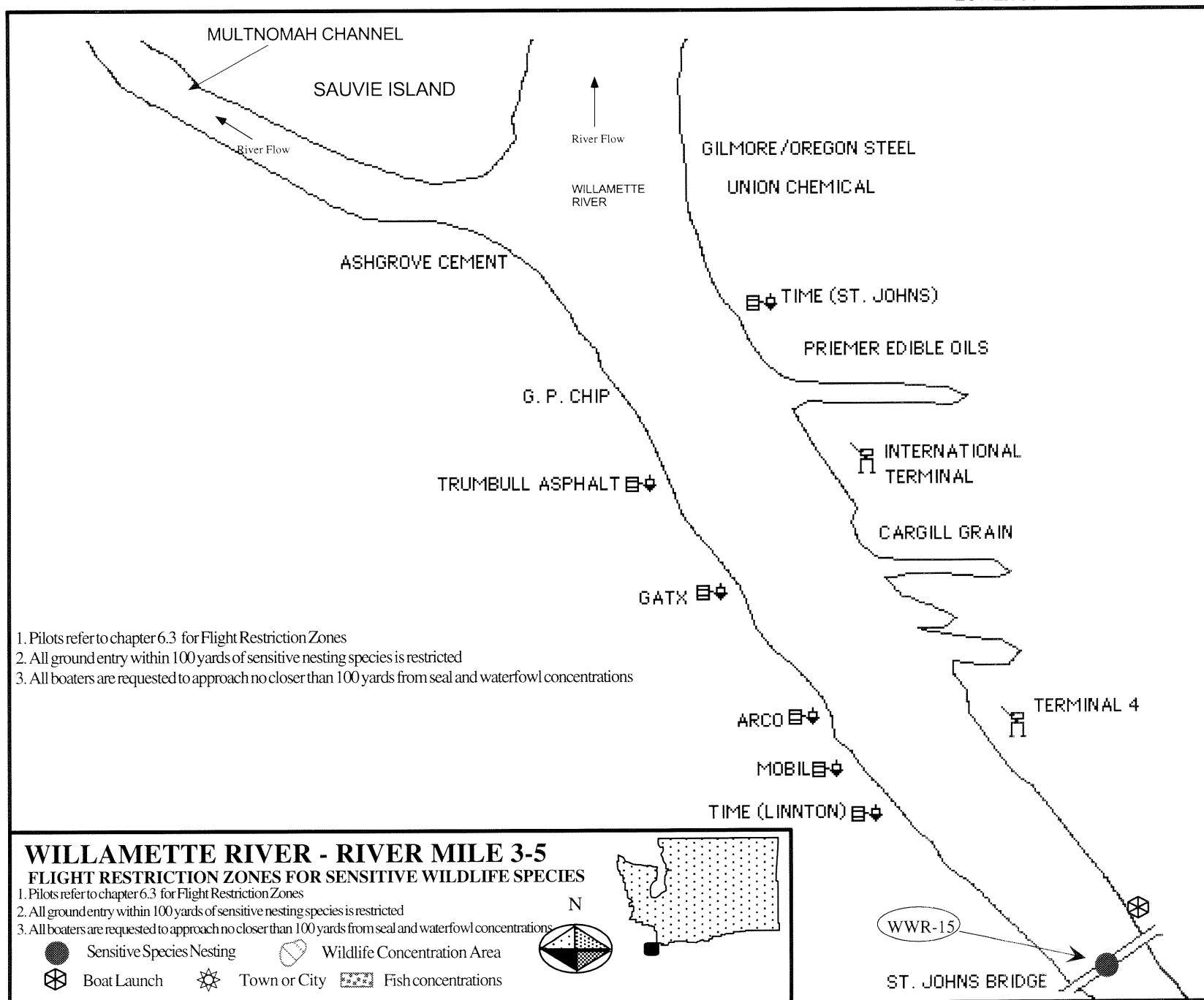
 Boat Launch
  Town or City
  Wildlife Concentration Area
  Sensitive Species Nesting
  Fish concentrations



LOWER WILLAMETTE RIVER FISH & WILDLIFE RESOURCES																				
Willamette River Mile 5-11																				
Code	Location	Turtles	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WWR-15	St. John's Bridge					Yes		Yes												
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div> <div></div> <div>Flights below 1000 feet require clearance</div> </div> <div> <div></div> <div>Sensitive season - Minimize overflight disturbance</div> </div> </div>																				





LOWER WILLAMETTE RIVER FISH & WILDLIFE RESOURCES																					
Willamette River Mile 3-5																					
			Seabird	Waterfowl	Marine	Sensitive	Shorebird	Flight													
Code	Location	Turtles	Conc	Conc	Mammal	Nesting	Conc	Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WWR-15	St. John's Bridge					Yes		Yes													
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Sensitive season - Minimize overflight disturbance</div></div>																					

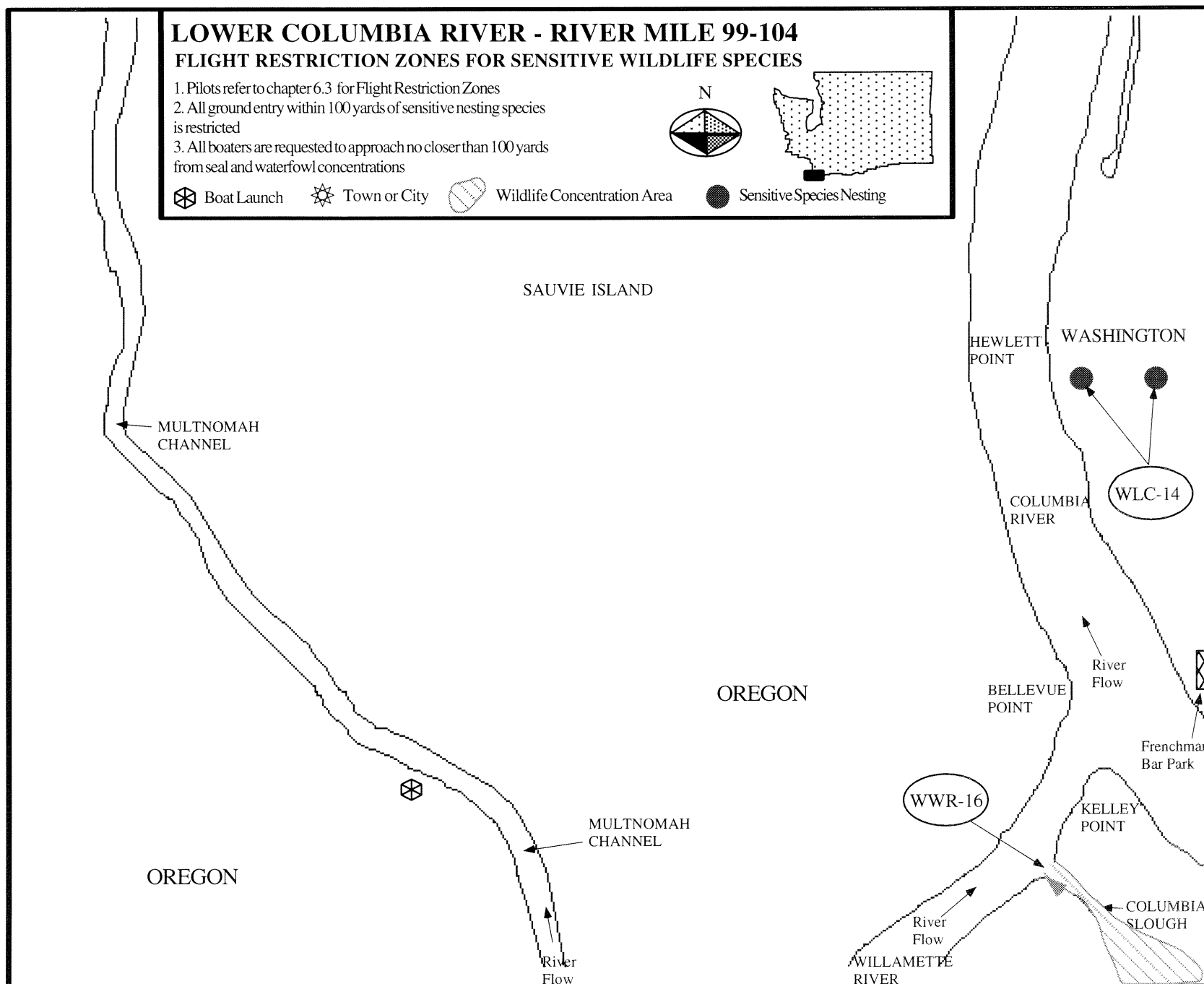


LOWER COLUMBIA RIVER FISH & WILDLIFE RESOURCES																					
River Mile 99-104																					
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WWR-16	Columbia Slough					Yes		Yes													
WLC-14	Hewlett Point					Yes		Yes													

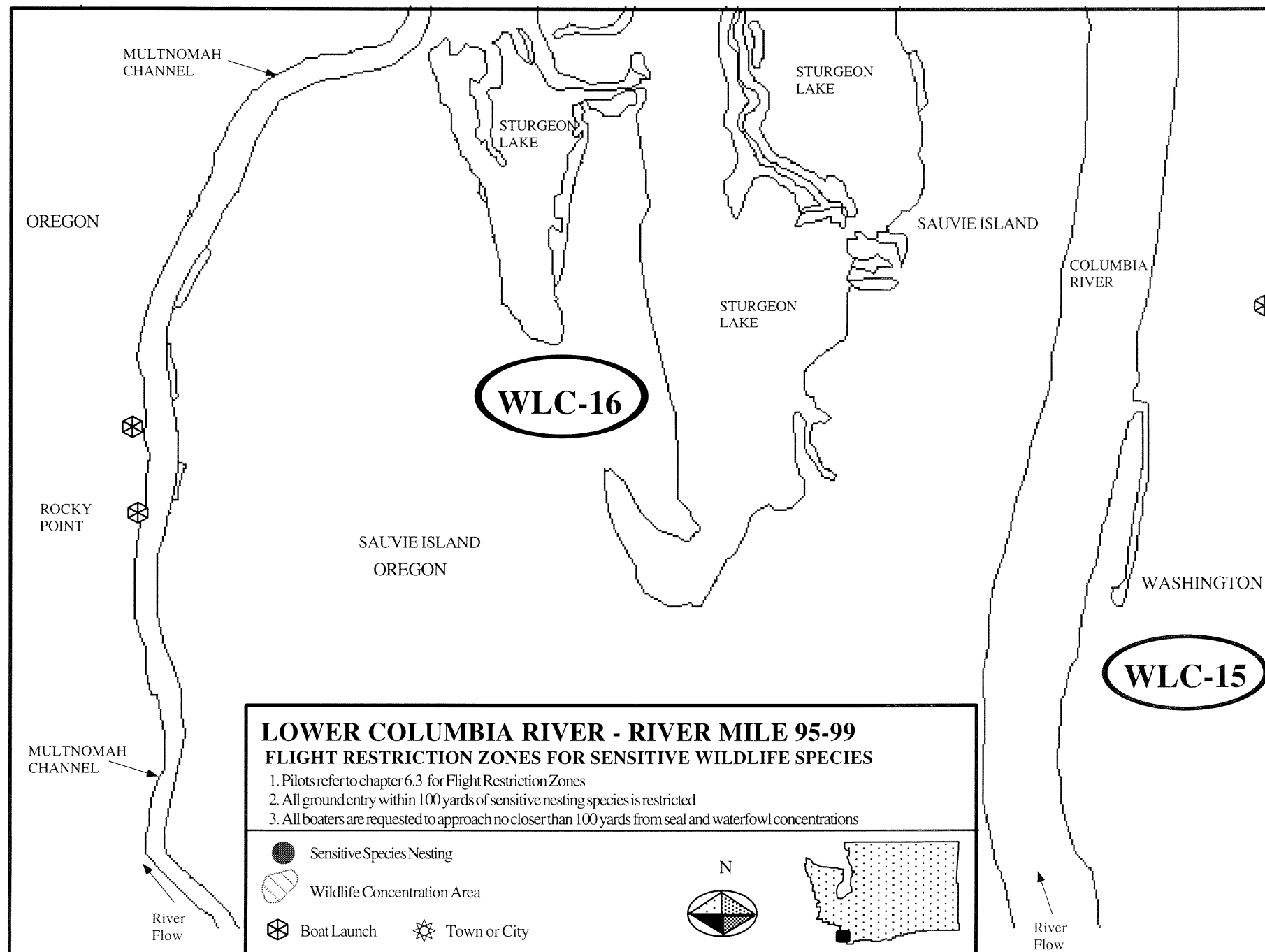
* FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance

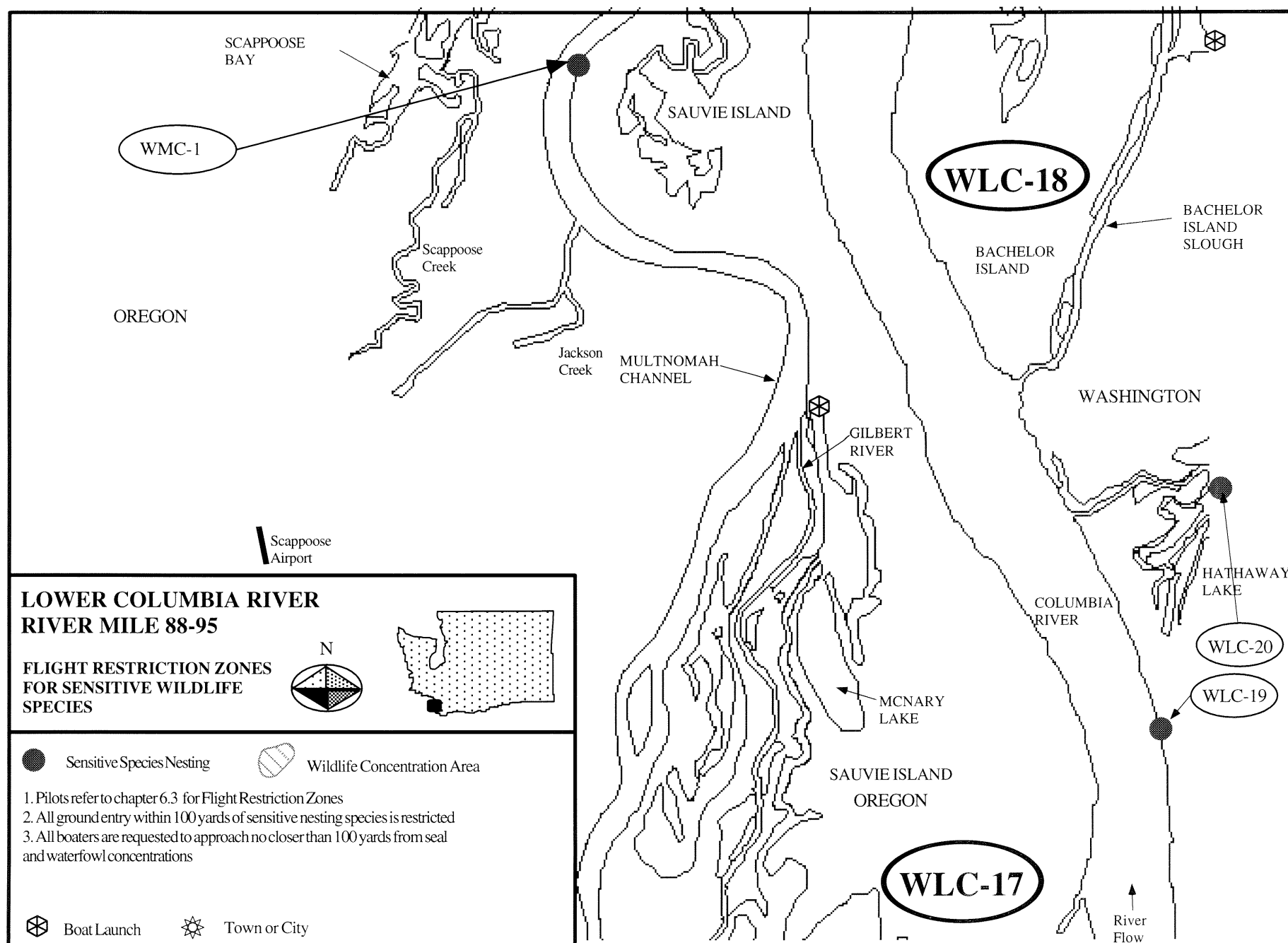
 Sensitive season - Minimize overflight disturbance





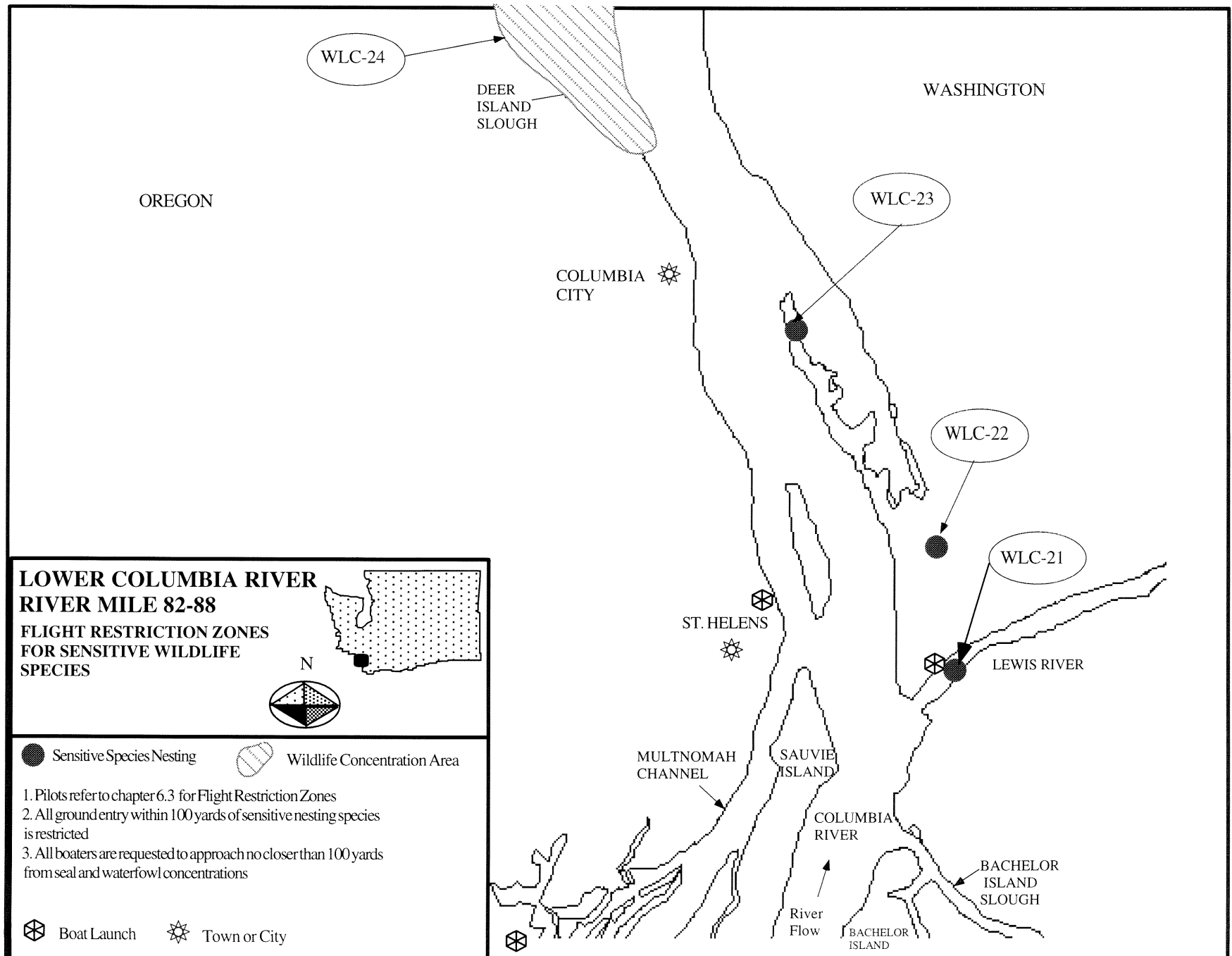
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 95-99												PERIOD OF SENSITIVITY									
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-15	Vancouver Lake area			Yes		Yes		Yes													
WLC-16	Sturgeon Island area					Yes		Yes													
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Sensitive season - Minimize overflight disturbance</div></div>																					



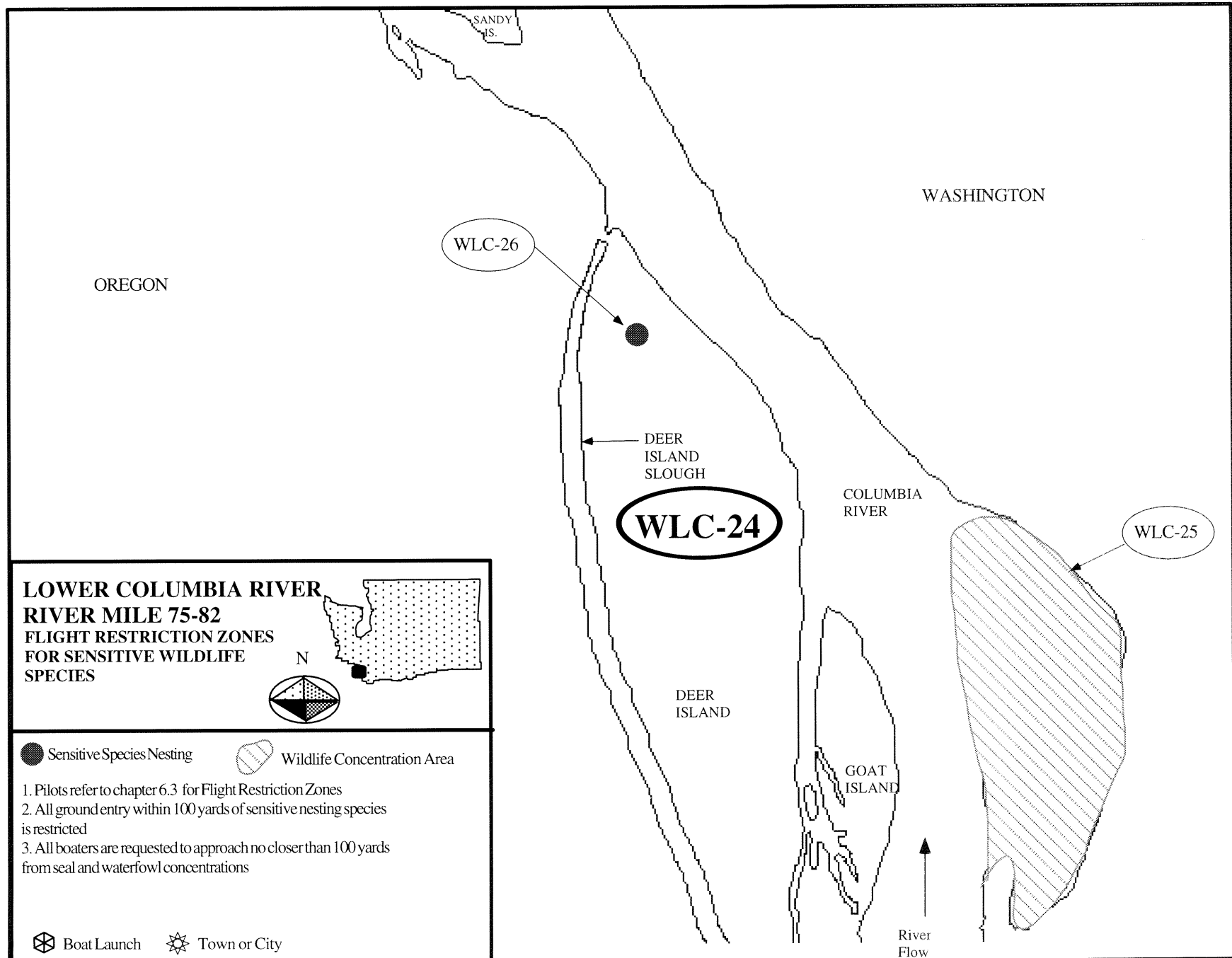
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 88-95																					
									</												



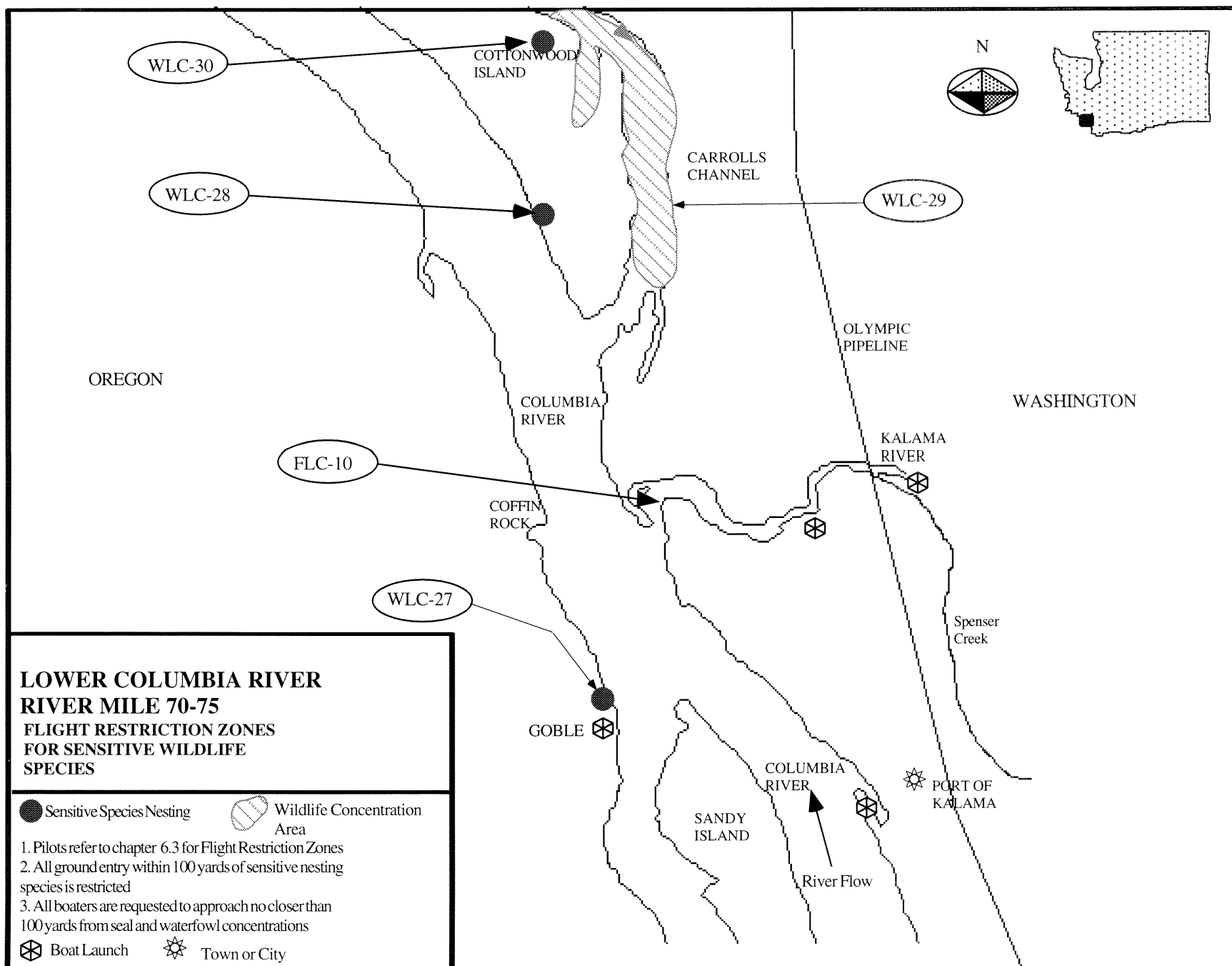
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 82-88																				
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-21	Lewis River					Yes		Yes												
WLC-22	South of Goerig Slough					Yes		Yes												
WLC-23	Southeast of Goerig Slough					Yes		Yes												
WLC-24	Deer Island			Yes				Yes												
LOWER COLUMBIA RIVER FISHERY RESOURCES																				
River Mile 82-88																				
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FLC-6	Salmon Creek	D					D													
FLC-7	Lewis River	D		H		H	D													
FLC-8	East Fork Lewis River	D	U			H	D													
FLC-9	North Fork Lewis River		D																	
* FLIGHT AND GROUND ENTRY RESTRICTIONS  Flights below 1000 feet require clearance  Sensitive season - Minimize seasonal disturbance										FISH STOCK STATUS C - CRITICAL D - DEPRESSED H - HEALTHY U - UNKNOWN										





LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 76-82																				



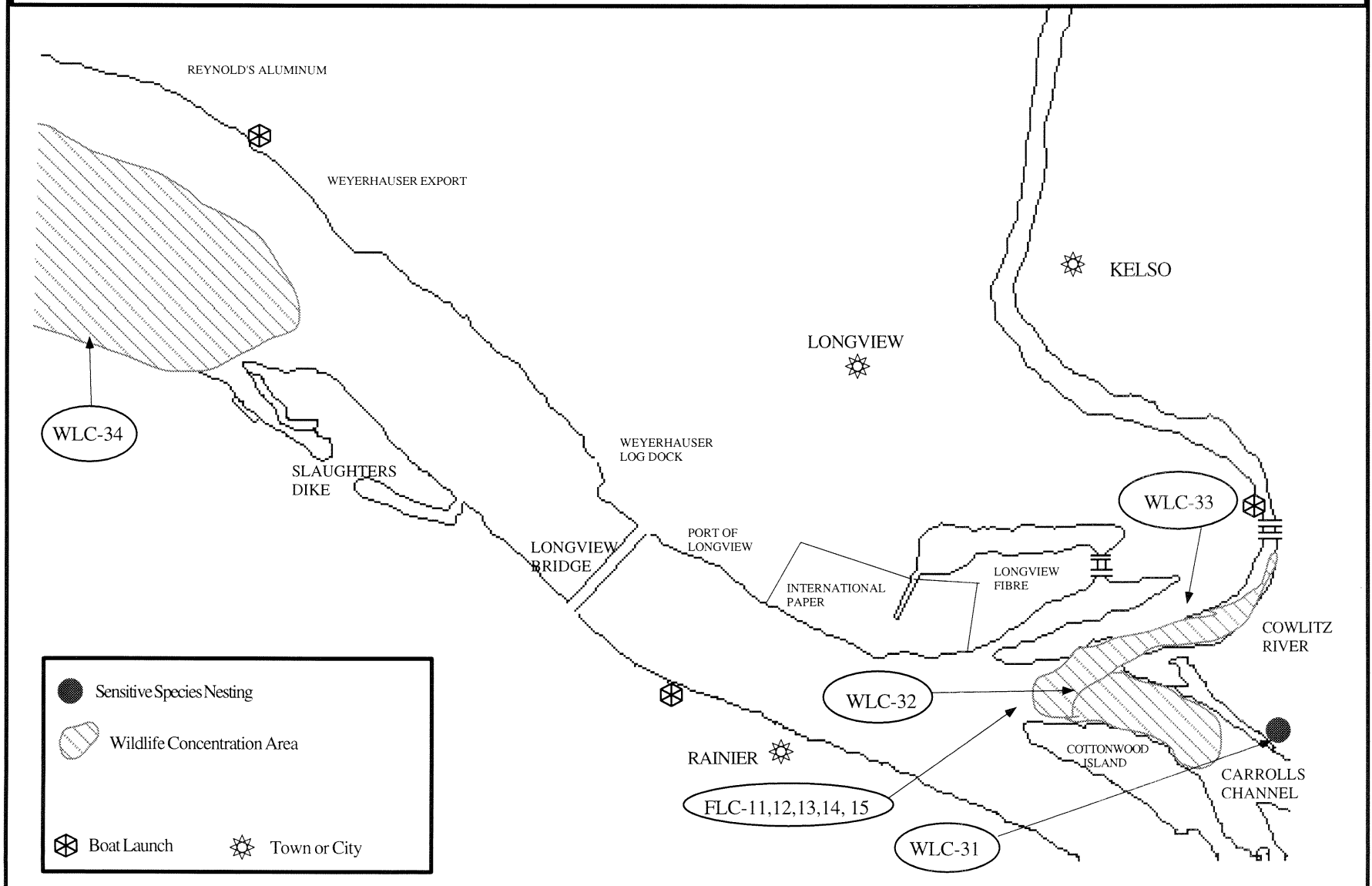
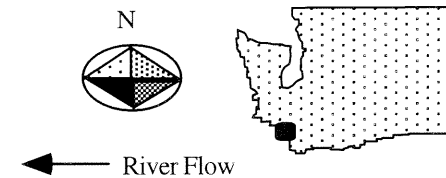
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																						
River Mile 70-75												PERIOD OF SENSITIVITY										
		Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion														
Code	Location								Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
WLC-27	Goble					Yes		Yes														
WLC-28	Cottonwood Island					Yes		Yes														
WLC-29	Carrolls Channel			Yes				Yes														
WLC-30	Cottonwood Island					Yes		Yes														
LOWER COLUMBIA RIVER FISHERY RESOURCES																						
River Mile 70-75												PERIOD OF SENSITIVITY										
		Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon														
Code	Location								Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
FLC-10	Kalama River	H	D	H		H	D															
<div><div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Sensitive season - Minimize seasonal disturbance</div></div><div>FISH STOCK STATUS C - CRITICAL D - DEPRESSED H - HEALTHY U - UNKNOWN</div></div>																						



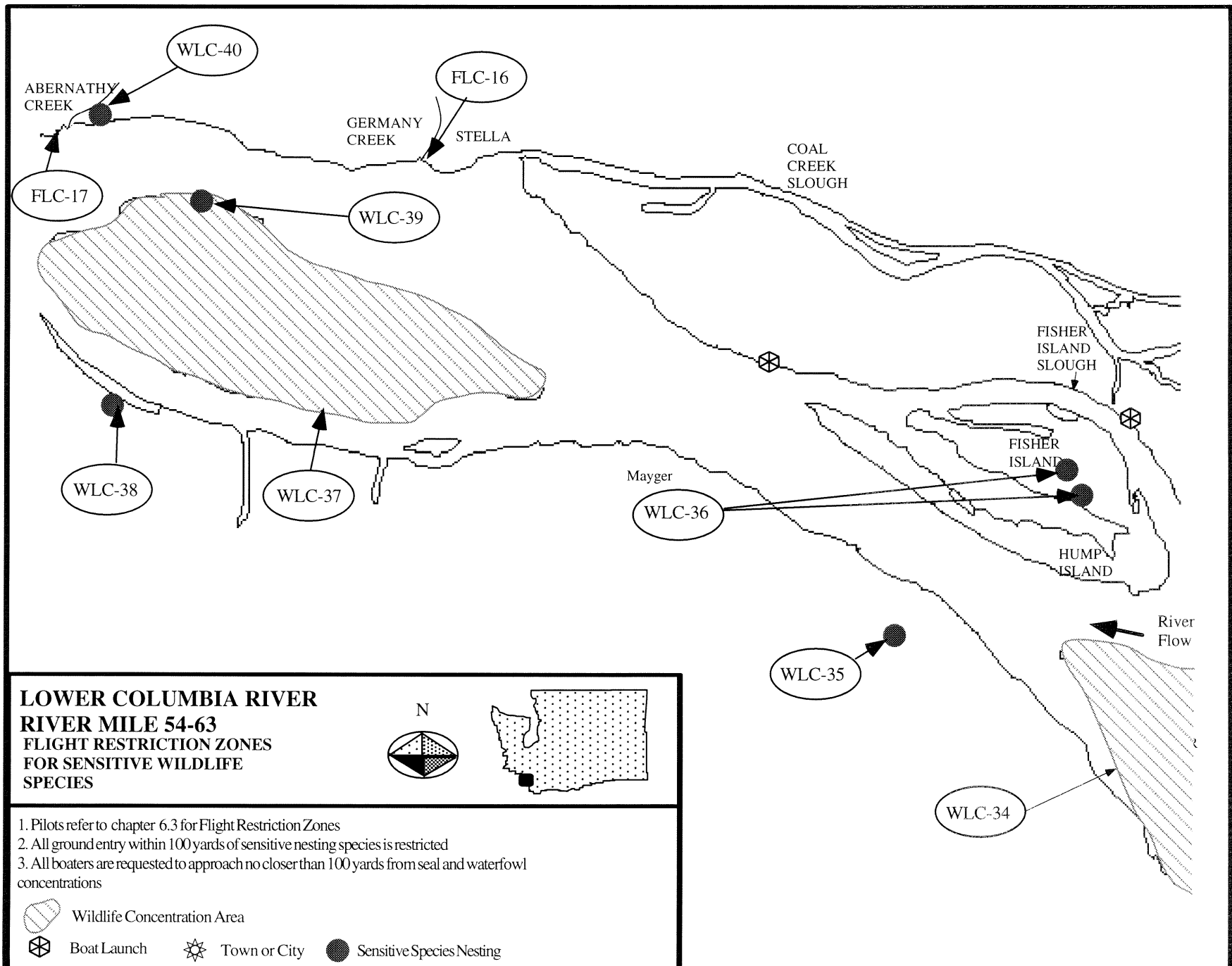
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 63-70										PERIOD OF SENSITIVITY											
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-31	Carrolls Channel					Yes		Yes													
WLC-32	Carrolls Channel				Yes																
WLC-33	Cowlitz River		Yes																		
WLC-34	Lord Island			Yes				Yes													
LOWER COLUMBIA RIVER FISHERY RESOURCES																					
River Mile 63-70										PERIOD OF SENSITIVITY											
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FLC-11	Cowlitz River	D		H		H	D														
FLC-12	Coweeman River Mainstem/ North	D				H	D														
FLC-13	Fork Toutle River South Fork Toutle	D					D														
FLC-14	River	H				D	D														
FLC-15	Green River	D				D	D														
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div>  Flights below 1000 feet require clearance  Sensitive season - Minimize seasonal disturbance </div> </div> <div> FISH STOCK STATUS C - CRITICAL D - DEPRESSED H - HEALTHY U - UNKNOWN </div>																					

LOWER COLUMBIA RIVER - RIVER MILE 63-70 **FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES**

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

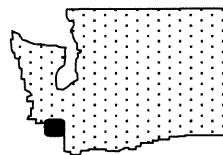
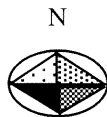


LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 54-63												PERIOD OF SENSITIVITY									
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-34	Lord Island			Yes				Yes													
WLC-35	Oregon shore near Walker Island					Yes		Yes													
WLC-36	Fisher Island					Yes		Yes													
WLC-37	Crims Island			Yes		Yes		Yes													
WLC-38	Bradbury Slough					Yes		Yes													
WLC-39	Gull Island					Yes		Yes													
WLC-40	Abernathy Creek					Yes		Yes													
LOWER COLUMBIA RIVER FISHERY RESOURCES																					
River Mile 54-63												PERIOD OF SENSITIVITY									
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
FLC-16	Germany Creek	D				H	D														
FLC-17	Abernathy Creek	D				H	D														
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Sensitive season - Minimize seasonal disturbance</div></div> <div><div>FISH STOCK STATUS</div><div>C - CRITICAL</div><div>D - DEPRESSED</div><div>H - HEALTHY</div><div>U - UNKNOWN</div></div>																					



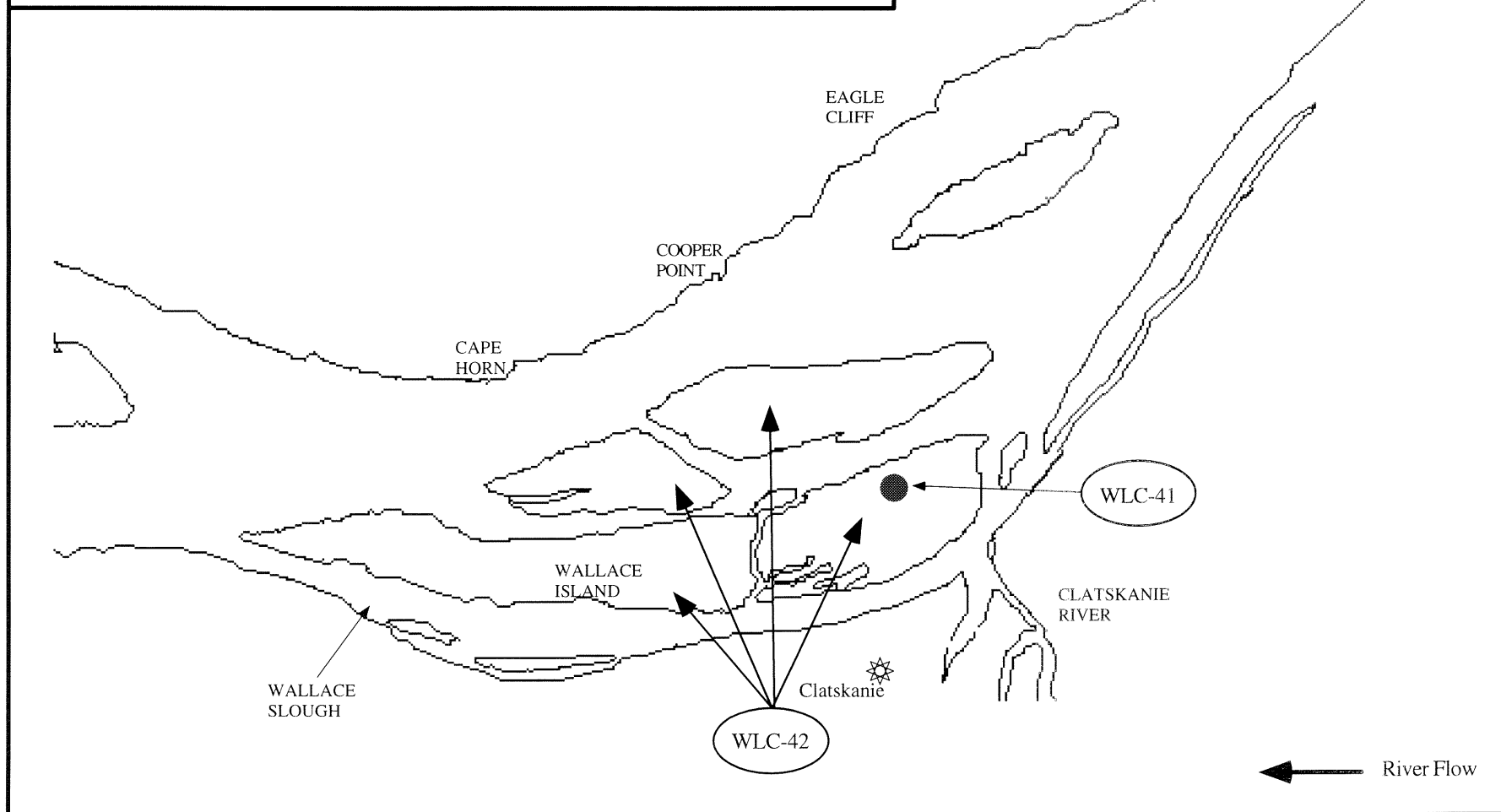
LOWER COLUMBIA RIVER WILDLIFE RESOURCES																										
River Mile 47-54										PERIOD OF SENSITIVITY																
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
WLC-41	Wallace Island					Yes		Yes																		
WLC-42	Wallace Island Complex					Yes		Yes																		
LOWER COLUMBIA RIVER FISHERY RESOURCES																										
River Mile 47-54										PERIOD OF SENSITIVITY																
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
FLC-18	Mill Creek	D				H	D																			
* FLIGHT AND GROUND ENTRY RESTRICTIONS										FISH STOCK STATUS																
<div>Flights below 1000 feet require clearance</div>										C - CRITICAL																
<div>Sensitive season - Minimize seasonal disturbance</div>										D - DEPRESSED																
										H - HEALTHY																
										U - UNKNOWN																

LOWER COLUMBIA RIVER
RIVER MILE 47-54
FLIGHT RESTRICTION ZONES
FOR SENSITIVE WILDLIFE
SPECIES



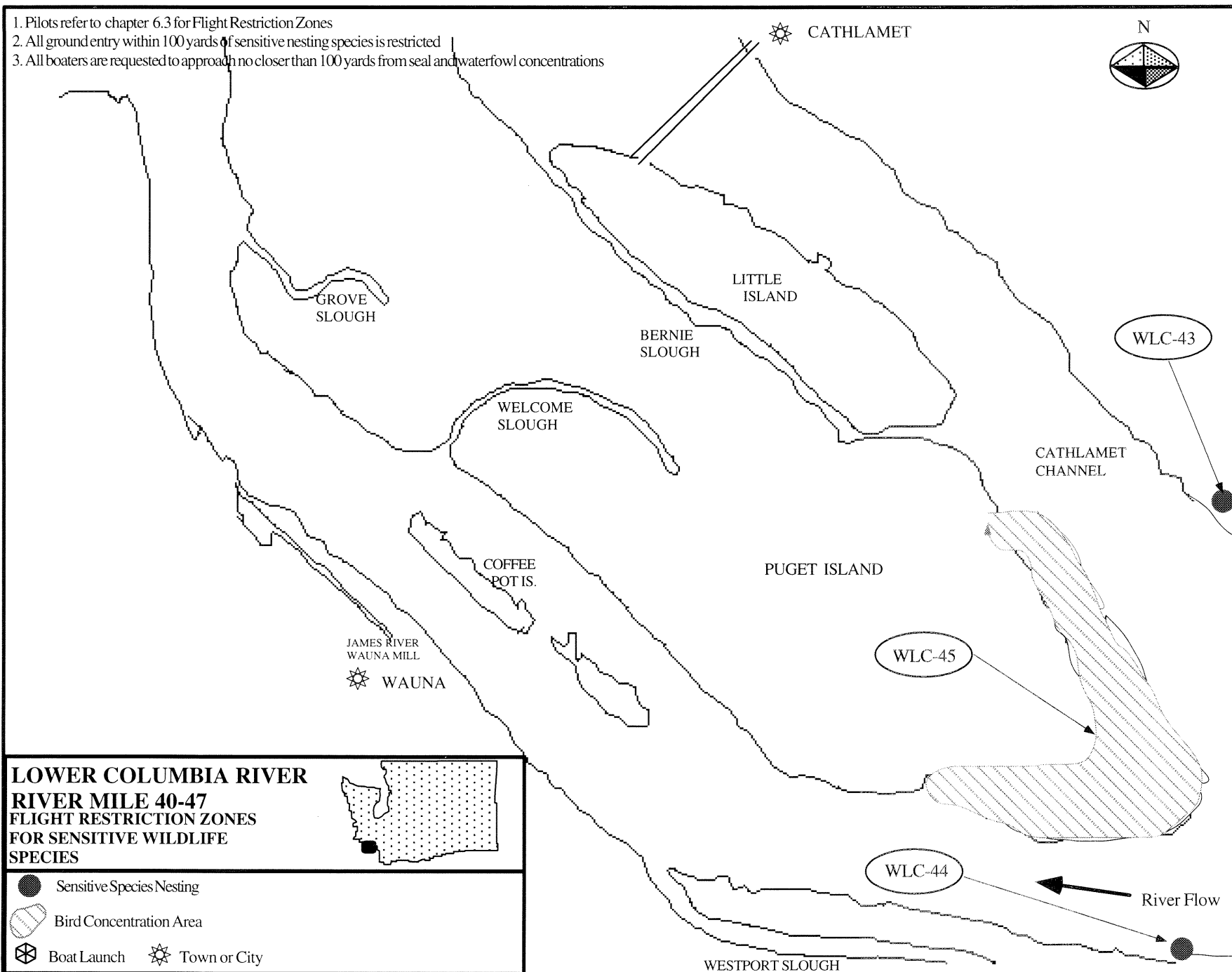
1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

- Sensitive Species Nesting
 Wildlife Concentration Area
 Boat Launch
 Town or City

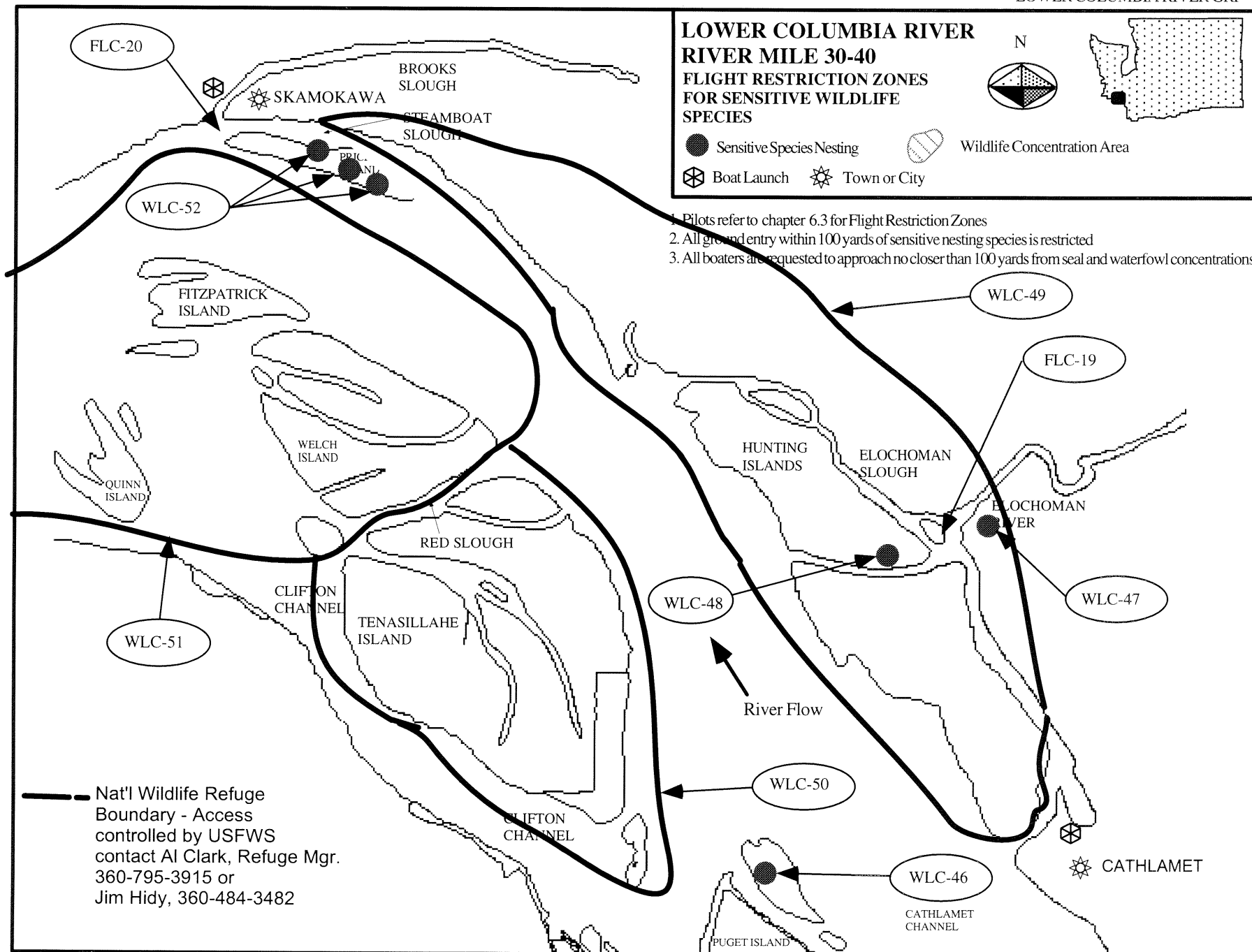


LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 40-47										PERIOD OF SENSITIVITY											
		Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	Location																				
WLC-43	Nassa Point					Yes		Yes													
WLC-44	Oregon shore south of Puget Island					Yes		Yes													
WLC-45	Puget Island					Yes		Yes													
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Sensitive season - Minimize overflight disturbance</div>																					

1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



LOWER COLUMBIA RIVER WILDLIFE RESOURCES																										
River Mile 30-40												PERIOD OF SENSITIVITY														
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
WLC-46	Ryan Island					Yes		Yes																		
WLC-47	Elochoman River					Yes		Yes																		
WLC-48	Hunting Island					Yes		Yes																		
WLC-49	Julia Butler Hanson NWR			Yes				Yes																		
WLC-50	Columbia Whitetail Deer NWR			Yes				Yes																		
WLC-51	Lewis and Clark NWR			Yes				Yes																		
WLC-52	Price Island					Yes		Yes																		
LOWER COLUMBIA RIVER FISHERY RESOURCES																										
River Mile 30-40												PERIOD OF SENSITIVITY														
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
FLC-19	Elochoman River	D				H	D																			
FLC-20	Skamokawa Creek	U				H	D																			
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Nat'l Wildlife Refuge - Access restricted - contact Al Clark - 360-795-3915</div> <div><div></div>Sensitive season - Minimize seasonal disturbance</div>										<div>FISH STOCK STATUS</div> <div>C - CRITICAL</div> <div>D - DEPRESSED</div> <div>H - HEALTHY</div> <div>U - UNKNOWN</div>																

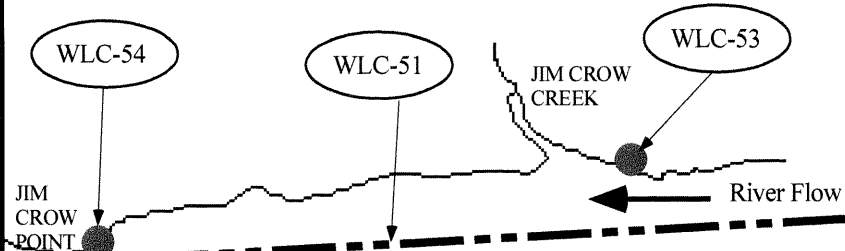
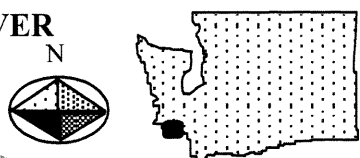


LOWER COLUMBIA RIVER WILDLIFE RESOURCES																												
River Mile 25-30										PERIOD OF SENSITIVITY																		
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec								
WLC-51	Lewis and Clark NWR			Yes	Yes		Yes	Yes																				
WLC-53	Jim Crow Creek					Yes		Yes																				
WLC-54	Jim Crow Point					Yes		Yes																				
WLC-55	Dahlia					Yes		Yes																				
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Nat'l Wildlife Refuge - Access restricted - contact Al Clark - 360-795-3915</div><div><div></div>Sensitive season - Minimize overflight disturbance</div></div>																												

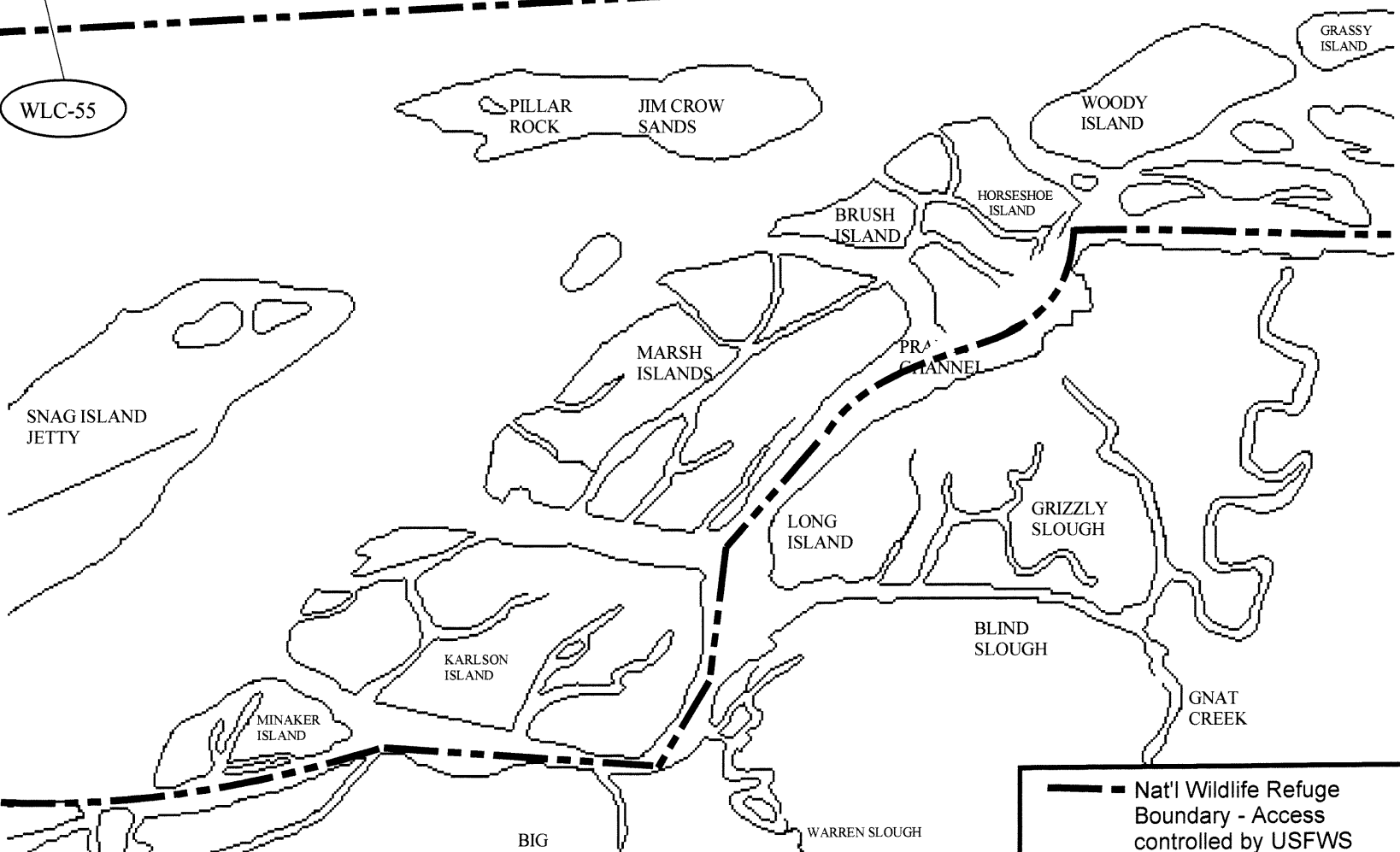
LOWER COLUMBIA RIVER RIVER MILE 25-30

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

-  Sensitive Species Nesting
-  Wildlife Concentration Area
-  Boat Launch
-  Town or City



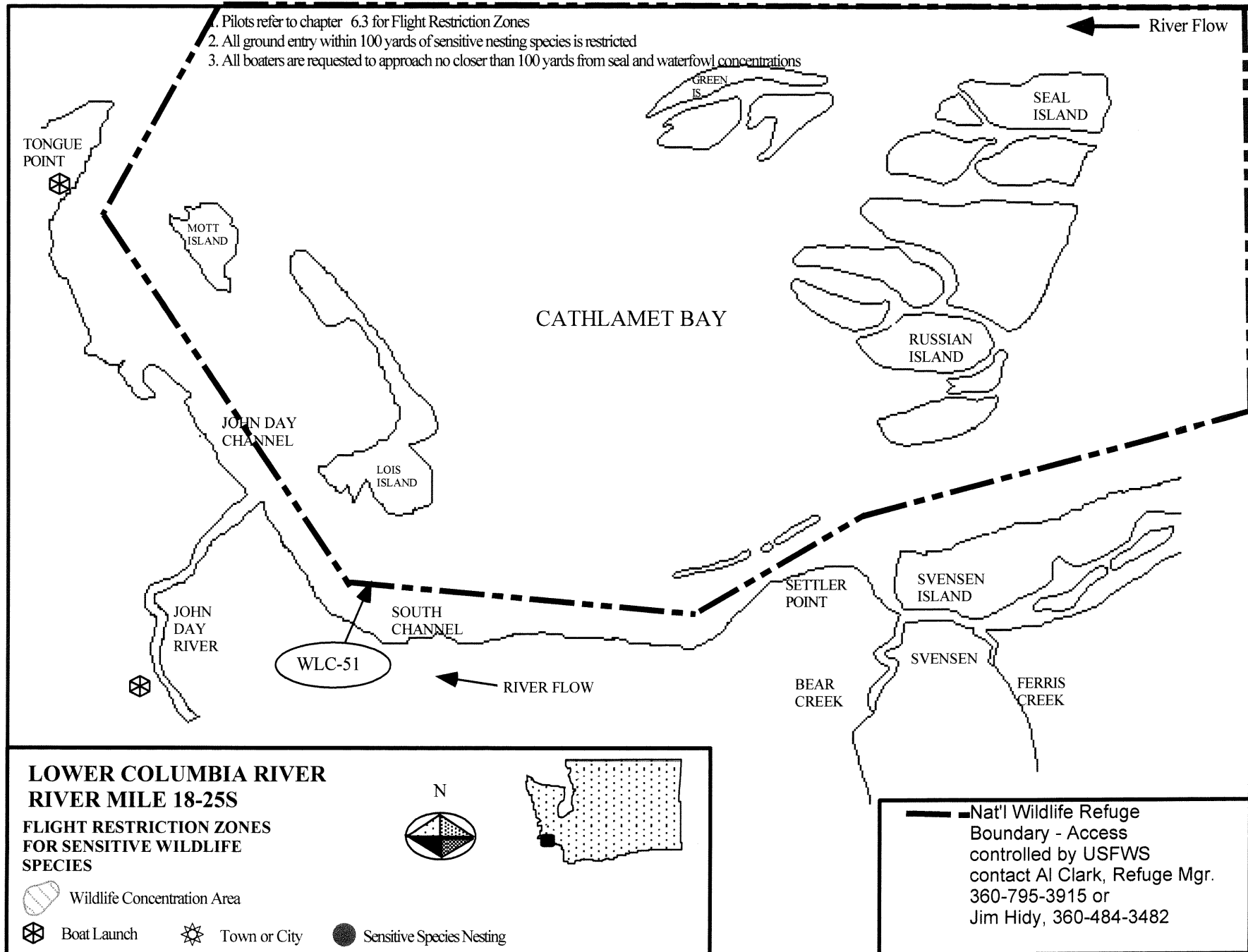
WLC-55



1. Pilots refer to chapter 6.3 for Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations

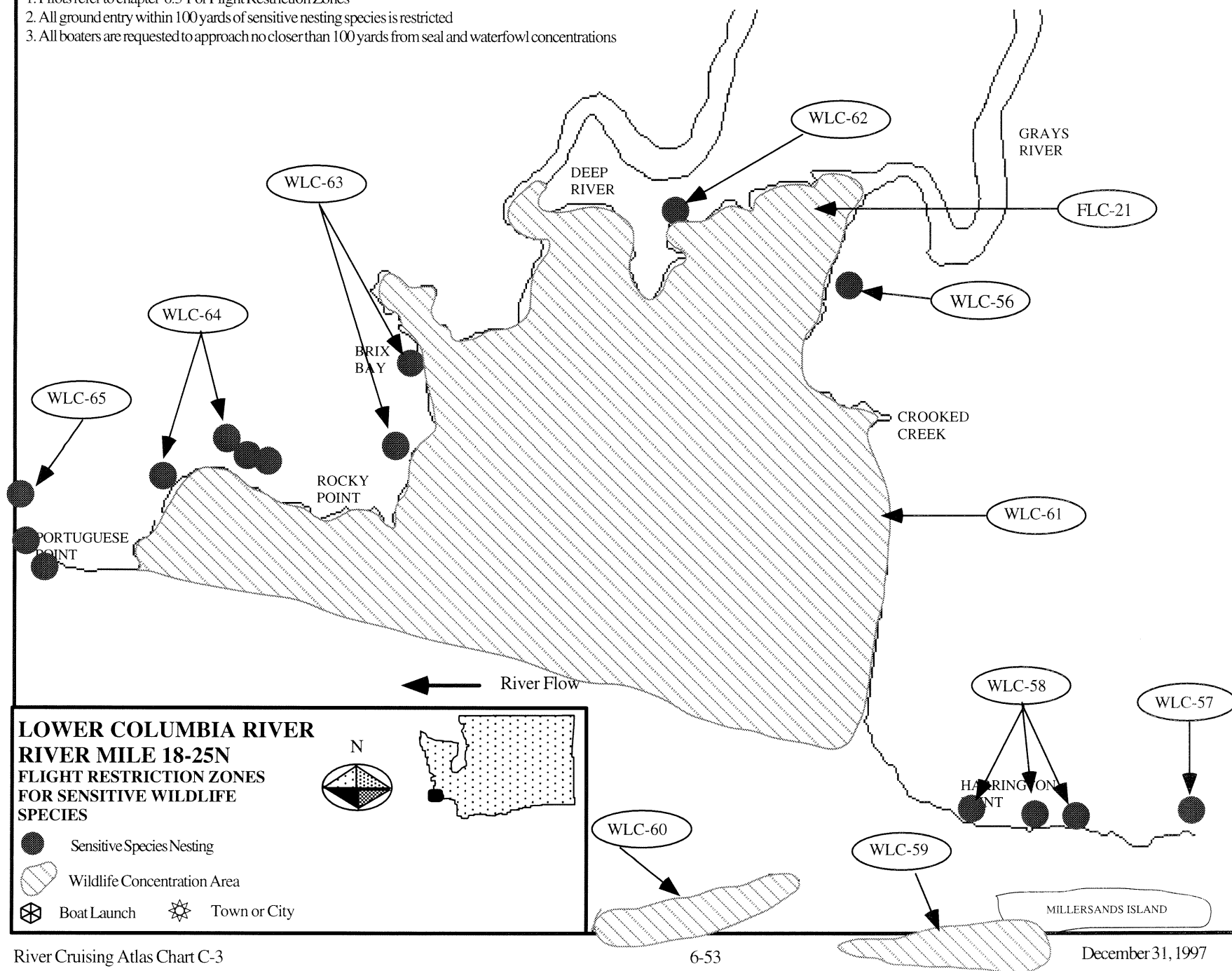
— Nat'l Wildlife Refuge
Boundary - Access
controlled by USFWS
contact Al Clark, Refuge Mgr.
360-795-3915 or
Jim Hidy, 360-484-3482

LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 18-25S										PERIOD OF SENSITIVITY											
		Seabird	Seabird	Waterfowl	Marine	Sensitive															
Code	Location	Colony	Conc	Conc	Mammal Haulout	Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-51	Lewis and Clark NWR			Yes	Yes		Yes	Yes													
<div><div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div><div><div></div>Flights below 1000 feet require clearance</div><div><div></div>Nat'l Wildlife Refuge - Access restricted - contact Al Clark - 360-795-3915</div><div><div></div>Sensitive season - Minimize overflight disturbance</div></div>																					



LOWER COLUMBIA RIVER WILDLIFE RESOURCES																					
River Mile 18-25N											PERIOD OF SENSITIVITY										
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WLC-56	Gray's River					Yes		Yes													
WLC-57	Harrington Point					Yes		Yes													
WLC-58	Altoona					Yes		Yes													
WLC-59	Miller Sands	Yes		Yes		Yes	Yes	Yes													
WLC-60	Rice Island	Yes		Yes				Yes													
WLC-61	Grays Bay			Yes			Yes	Yes													
WLC-62	Miller Point					Yes		Yes													
WLC-63	Brix Bay					Yes		Yes													
WLC-64	Portugese Point					Yes		Yes													
WLC-65	Grays Point					Yes		Yes													
LOWER COLUMBIA RIVER FISHERY RESOURCES																					
River Mile 18-25N											PERIOD OF SENSITIVITY										
Code	Location	Winter Steelhead	Summer Steelhead	Spring Chinook	Summer Chinook	Fall Chinook	Coho Salmon	Chum Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
FLC-21	Gray's River	D				H	D	D													
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Sensitive season - Minimize seasonal disturbance</div>										FISH STOCK STATUS											
										C - CRITICAL											
										D - DEPRESSED											
										H - HEALTHY											
										U - UNKNOWN											

1. Pilots refer to chapter 6.3 For Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



LOWER COLUMBIA RIVER WILDLIFE RESOURCES																									
River Mile 0-18N												PERIOD OF SENSITIVITY													
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
WLC-66	Cliff Point					Yes		Yes																	
WLC-67	Megler					Yes		Yes																	
WLC-68	Scarboro Point					Yes		Yes																	
WLC-69	Sand Island	Yes						Yes																	
WLC-70	Baker Bay			Yes			Yes	Yes																	
WLC-71	Fort Canby State Park					Yes		Yes																	
WLC-72	Cape Disappointment	Yes				Yes		Yes																	
WLC-73	North Jetty		Yes	Yes				Yes																	
WLC-74	Columbia River mouth		Yes					Yes																	
<div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div><div></div>Flights below 1000 feet require clearance</div> <div><div></div>Sensitive season - Minimize overflight disturbance</div>																									

LOWER COLUMBIA RIVER

RIVER MILE 0-18N

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 100 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 100 yards from seal and waterfowl concentrations



Boat Launch



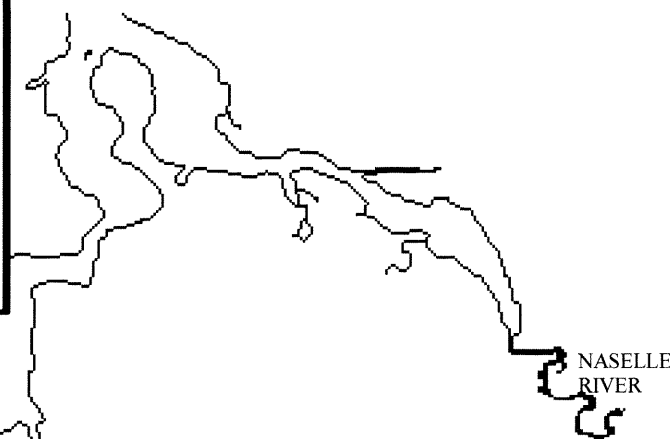
Town or City



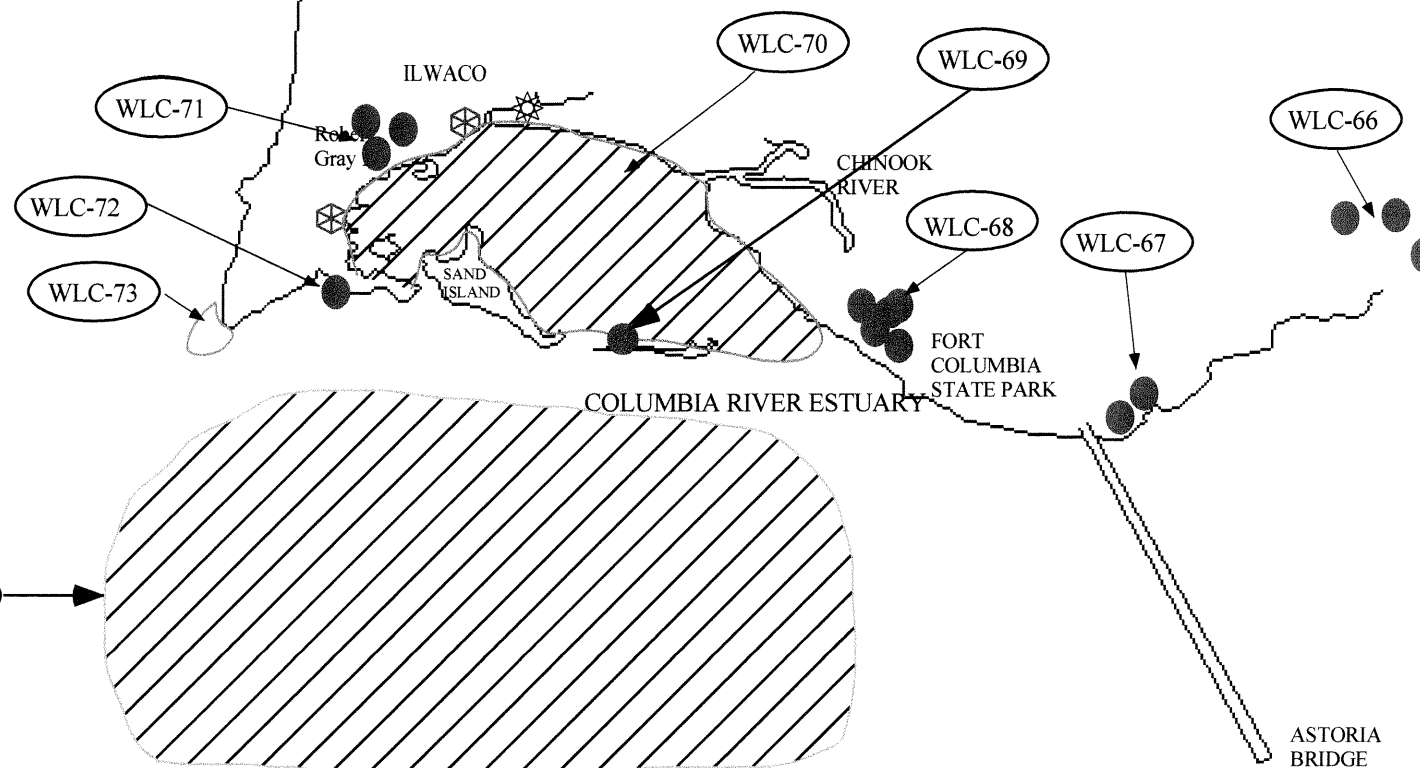
Sensitive Species Nesting



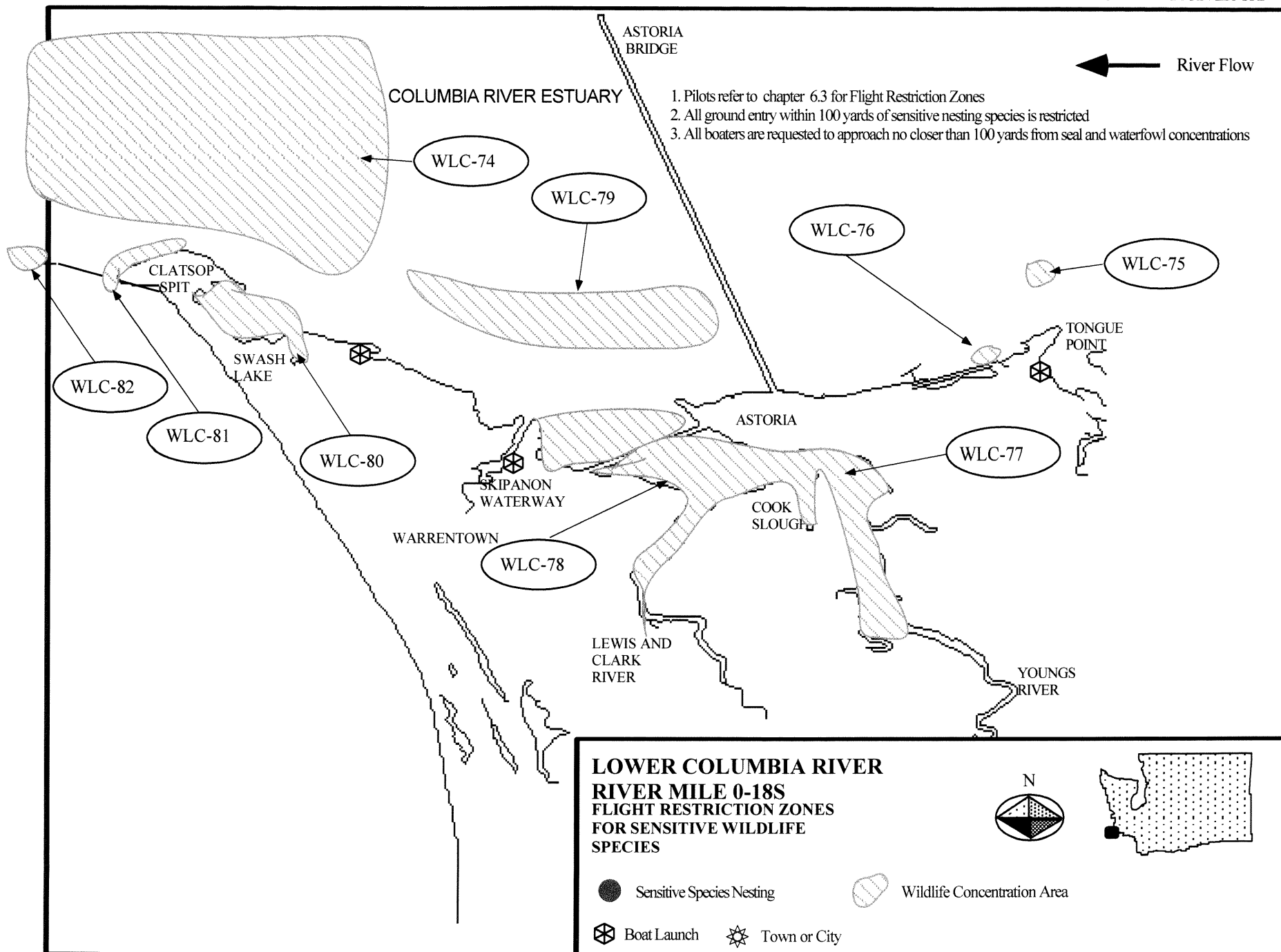
Wildlife Concentration Area



NASELLE RIVER



LOWER COLUMBIA RIVER WILDLIFE RESOURCES																				
River Mile 0-18S																				
		PERIOD OF SENSITIVITY																		
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Shorebird Conc	Flight Exclusion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WLC-74	Columbia River mouth		Yes					Yes												
WLC-75	Tongue Point				Yes															
WLC-76	City Harbor				Yes															
WLC-77	Young's River			Yes				Yes												
WLC-78	Young's Bay			Yes				Yes												
WLC-79	Desdemona Sands				Yes															
WLC-80	Siwash Lake and Jetty Lagoon			Yes				Yes												
WLC-81	Clatsop Spit			Yes				Yes												
WLC-82	South Jetty			Yes				Yes												
<div> <div>* FLIGHT AND GROUND ENTRY RESTRICTIONS</div> <div> <div></div> <div>Flights below 1000 feet require clearance</div> </div> <div> <div></div> <div>Sensitive season - Minimize overflight disturbance</div> </div> </div>																				



6.6 Downstream Water Users

Because GRPs focus only on protection of public resources, the numerous private water intakes along the lower Willamette and lower Columbia Rivers are not listed in this plan. Key public water intakes within the planning area include:

- Port of Vancouver
- Ridgefield National Wildlife Refuge
- Port of Longview
- Port of Wahkiakum
- Hunting Island – U.S. Fish & Wildlife Service

Most of these sites are also identified under the “Resources Protected” sections of applicable strategy matrices in Section 4.3.